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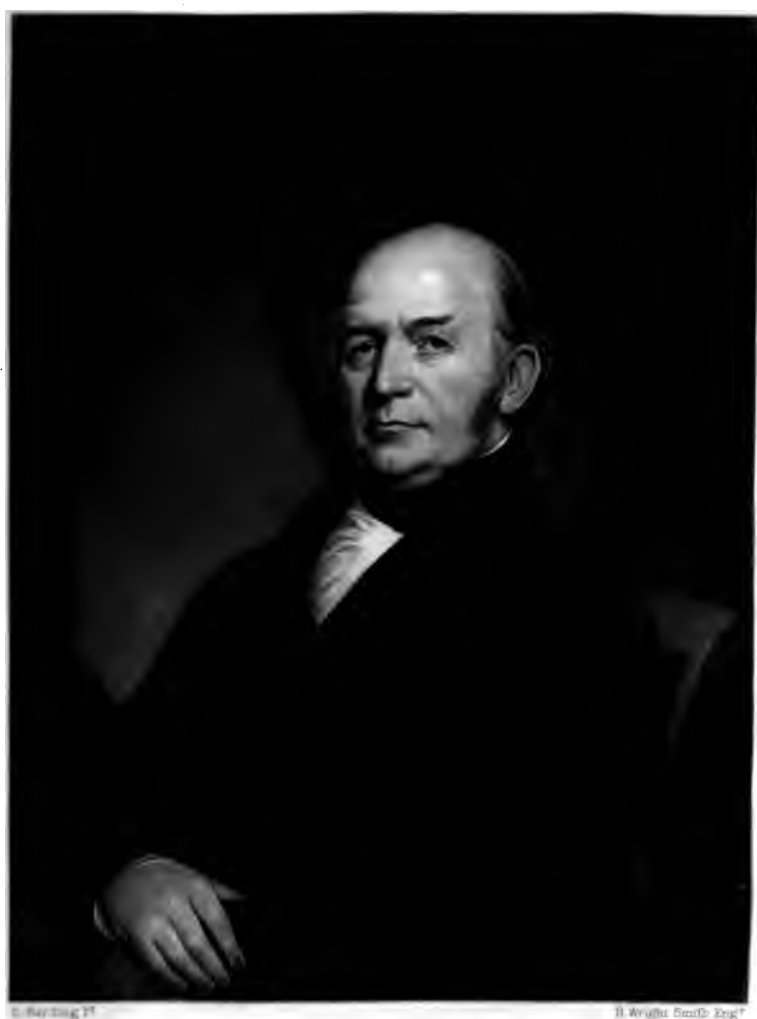


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WILLIAM LAWSON C. B.

THE
AMERICAN
Journal of Education.

EDITED BY
HENRY BARNARD, LL.D.

VOLUME II.

HARTFORD, F. C. BROWNELL.
LONDON: TRÜBNER & CO., 12 PATERNOSTER ROW.
1856.

ENTERED, according to Act of Congress, in the year 1856, by

HENRY BARNARD,

In the Clerk's Office of the District Court of Connecticut.



Preface.

THE plan of a series of publications, embracing a periodical to be issued monthly or quarterly, devoted exclusively to the History, Discussion, and Statistics of Systems, Institutions, and Methods of Education, in different countries, with special reference to the condition and wants of our own, was formed by the undersigned in 1842, on the discontinuance of the first series of the Connecticut Common School Journal, commenced by him in August, 1838. In pursuance of this plan, several tracts and treatises on distinct topics connected with the organization, administration, and instruction of schools of different grades, and especially of public elementary schools, were prepared and published, and the material for others was collected by travel, correspondence, purchase, and exchange.

The further prosecution of the work was suspended in consequence of his accepting the office of Commissioner of Public Schools in Rhode Island, but was resumed in 1849, on his resigning the same. In 1850 the plan was brought without success before the American Institute of Instruction, at its annual meeting at Northampton, in connection with an agency for the promotion of education in New England. Having been induced to accept the office of Superintendent of Common Schools in Connecticut, for the purpose of reestablishing the educational policy which had been overthrown in 1842, the undersigned undertook to carry out his plan of publication by preparing a series of reports and documents, each devoted to one important subject, under authority of the Legislature. In this connection "Practical Illustrations of the Principles of School Architecture," "Normal Schools, and other Institutions, and Agencies for the Professional Training and Improvement of Teachers," and "National Education in Europe," were prepared and published. Finding that the anxieties and labors of office, combined with that general correspondence, and special research and reflection which the completion of the series required, were too much for his health, he resigned his office, and addressed himself to the execution of the latter. Failing to enlist either the Smithsonian Institution, or the American Association for the Advancement of Education, in the establishment of a Central Agency, the undersigned undertook, in March, 1855, on his own responsibility, the publication of a Journal and Library of Education. Arrangements were accordingly made in April, to print the first number of the American Journal of Education, in connection with the publication of the proceedings of the Association for 1854, to be issued on or before the first of August, 1855.

After much of the copy of Number One was in type, a conference was held with the Rev. Absalom Peters, D. D., who contemplated the publication of a periodical under the title of the American College Review, and Educational Magazine or Journal. This conference led to the combination of the two periodicals, and a joint editorship of the American Journal of Education and College Review. The first number was published in type, style and matter as prepared by the undersigned, with the adoption of the Prospectus already prepared by Dr. Peters for his magazine, modified, so as to merge the prominent feature of the College Review in the more comprehensive title of the American Journal of Education.

In the preparation of the second number, it became evident that two could not walk, or work together, unless they be agreed, and by mutual arrangement, and for mutual convenience, it was determined after the issue of that number, to discontinue the joint publication, leaving each party "the privilege of publishing an Educational Magazine, for which he was entitled to use the first and second number of the American Journal of Education and College Review, as number one and two of his work."

In the spirit and letter of this arrangement, as understood by him, the undersigned resumed the title and plan of his own Journal, and has completed the first volume by the publication of a number for March and for May, with this variation only, that he has given his subscribers more than he originally promised, and in the further prosecution of his work, shall include in the Journal much that he intended for chapters in some of the treatises which were to compose the Library of Education.

Should the Journal be sustained by a liberal subscription list, and should the health of the present editor admit of the requisite labor, it will be continued for a period of five years, or until the issue of ten volumes, conducted substantially on the plan of Volume I.

The editor will studiously avoid the insertion of all topics, or papers foreign to the great subject to which it is devoted, or of a single line or word calculated to injure intentionally the feelings of any faithful laborer in any allotment of the great field of American Education.

HENRY BARNARD.

HARTFORD, CONN., }
MAY 1, 1856. }

American Journal of Education.

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THE
American Journal of Education.

No. V.—JULY, 1856.

I. THE AMERICAN INSTITUTE OF INSTRUCTION.

WE should be doing injustice to our own appreciation of the important services rendered to American Education in all its departments, by the American Institute of Instruction, through the Lectures and Discussions of its Annual Meetings for the last quarter of a century, and by its contributions to the educational literature of the English language in its twenty-six published volumes, if we did not seize the earliest opportunity to record its origin and history, and spread before our readers some evidence of its usefulness in the wide range of topics ably presented at its annual meetings, and embodied in a permanent form in the printed volumes of its proceedings.

Although, not the earliest* formed, the American Institute of Instruction, so far as we have any means of judging, is the oldest existing educational association in this country. With its present object and constitution, it originated in a Convention of Teachers and other friends of education, to the number of over two hundred, held at Columbian Hall, in Boston, on the 15th, 16th, 17th, and 18th of March, 1830; and, with a committee appointed by that meeting, on the 18th, "to digest a plan, and prepare a constitution for a permanent association of persons engaged or interested in the work of instruction." This meeting may have been suggested immediately by the gatherings for lectures and discussions under the general name of Lyceums, which were started by Josiah Holbrook, in 1826; but, the convention, and the resolution for a permanent and more general organization, in all probability, grew out of, and formed part of, a wide-spread movement or revival of interest and exertion in behalf of common schools and other institutions and agencies of popular improvement, which began to manifest itself as far back as the beginning of the present century, and which can be more distinctly traced in the action of public bodies, and in printed documents from 1818, until 1830, when it had reached a large number of teachers and public spirited individuals, in different parts of the country.

* The earliest Educational Association in this country, was formed at Middletown, Conn., in 1799, under the name of the "Middlesex County Association for the Improvement of Common Schools." See *Barnard's History of Education in Connecticut, from 1636 to 1853.*

The indications of this movement or "revival of education," as it has been called, may be traced in

The discussions in the public press, legislative halls, and city councils, which attended the establishment or improved organization and administration of public schools in many of the principal cities and large towns,² viz.: In New York, in 1806, by the opening of a free school for poor children, and the subsequent action of the Free (afterwards called the Public) School Society; in Philadelphia 1818, Lancaster in 1821, and Pittsburgh in 1828; in Boston,³ by the institution of Primary Schools in 1818, of English High School in 1821, and of a High School for girls in 1825; in Worcester in 1825, in Lowell in 1827, in Portland in 1822, and Bath in 1828, in Providence in 1828, in Hartford in 1826, in Cincinnati in 1828, &c.

The establishment of the School Fund in Connecticut, and the proposition⁴ to endow Common Schools out of the avails of the public lands belonging to the United States, and the presentation⁵ of this subject in some of its aspects, to the legislatures of several States, by the Governor or school officer:⁶

The establishment, or revision of the common or public school system in a majority of the States, viz.: in Kentucky, in 1821 and 1828; in Maine, in 1821; in Alabama, in 1823; in Maryland, Missouri, and Ohio, in 1825; in Connecticut, New Hampshire, Massachusetts, Vermont, Rhode Island, New York, Virginia, Delaware, and South Carolina, in 1827 or 1828:

(1.) **THE REVIVAL OF EDUCATION.** An Address to the Normal Association, Bridgewater, Mass., Aug. 8, 1855. By Rev. Samuel J. May, Syracuse, N. Y. Syracuse, J. G. R. Trubner, 1855. p. 40. In this Address the Author, who was an active and influential participator in the Educational Revival of Connecticut and Massachusetts from 1822 to 1845, and was Principal of the State Normal School at Lexington, in 1843, has presented a rapid and interesting sketch of the principal agents, and incidents of the great reform and improvement of the System of Common Schools and other means of Popular Education in New England.

(2.) The Progress and Condition of Educational Improvement in the principal cities of the United States—where our American System of Public Instruction has received its fullest development, will be presented in a subsequent number of this Journal.

(3.) The establishment of Primary Schools as part of the system of Public Schools in Boston in 1818, through the exertions of Elisha Ticknor and others, and subsequently of the English High School for boys who did not intend to go through College, and of a High School for girls; (afterwards merged in an extension of the course of instruction for girls in the Grammar Schools,) in 1825, are among the most important events in the history of public instruction in this country.

(4.) The project presented in 1821, by a Committee of the Senate of Maryland, of which Virgil Maxcy was Chairman, for distributing a portion of the avails of the sales of the Public Lands to the several States, for educational purposes, with the action of several of the State Legislatures, on the same, attracted the attention of public men everywhere to the condition and improvement of the common schools.

(5.) The messages of Gov. Clinton, of New York, of Gov. Lincoln, of Mass., of Gov. Butler, of Vermont, of Gov. Lincoln, of Maine, and of the governors of other states, between the years, 1826 and 1830, to their respective Legislatures, copied as they were widely and commented on, in the newspapers of the country, popularized the idea of the necessity of school improvement.

(6.) The appointment of a Superintendent of Common Schools in the State of New York, in 1812, and the annual reports of that officer, and especially of Azariah C. Flagg, John A. Dix, and John C. Spencer, exerted a powerful influence in inducing other states to recognize the common or public schools as a part of their leading policy.

The almost simultaneous publication in 1824-25, by Thomas H. Gallaudet, of Hartford, Conn., James G. Carter,¹⁰ of Lancaster, Mass., and Walter R. Johnson, of Germantown, Penn., in newspapers and in pamphlets, of their views on the improvement of public schools and education generally, by an institution for the professional training of teachers:⁹

The establishment of the American Journal of Education,¹¹ in January, 1826, and its monthly issue afterward of able discussions and current intelligence respecting schools and education until merged in the American Annals of Education in 1830:

The experiments in infant, monitorial, and manual-labor schools:

The improvement of text-books, and particularly the publication of Colburn's⁹ First Lessons:

The establishment and multiplication of seminaries for the education of girls:¹²

The proposition, in 1825, for the establishment of independent schools of practical science, or extension of our plans of collegiate instruction,¹⁴ so as to admit of more attention to the sciences and especially as applied to the useful arts:

The formation of Mechanic Institutions, in 1821, and the Lyceum¹³ with its popular lectures, cabinets of specimens of natural history, classes for debates and mutual instruction, in 1826:

The conventions, town, county, and state, held in behalf of common schools in Connecticut, and other parts of New England, from 1826 to

(7.) An History of the Legislation of the several States respecting Common or Public Schools, with an outline of the System of operation in 1856, in each state, will be published in No. 7 or 8, of this Journal.

(8.) The earliest suggestion of institutions, where teachers of common schools could be qualified, was made by Elisha Ticknor, in 1789, in the Massachusetts Magazine, and the first proposition for a distinct academy or institution for this purpose, by Denison Olmsted, now Professor in Yale College at New Haven, in 1817.

(9.) We shall publish a biographical sketch of Warren Colburn, in the next number of this Journal.

(10.) The services of James G. Carter, from 1822 to 1837, in behalf of the professional education of teachers, the improvement of text-books, and the more vigorous administration of public schools, are strangely overlooked. We have collected the material for a sketch of his educational labors.

(11.) We shall present a sketch of the labors of William Russell, William C. Woodbridge, and William A. Alcott--in acknowledgment of the debt of gratitude due to them for their services to the cause, especially as the editors of the first periodical devoted to the advancement of education in the English language.

(12.) In connection with a biography of Josiah Holbrook, we shall give a history of the Lyceum, and Popular Scientific Lecture.

(13.) The general development of the American College System, and its sudden expansion from about the year 1825, will be shown in the "History and Condition of Colleges in the United States," which we propose to give soon in one or two numbers of the Journal, for convenience of comparison and reference.

(14.) The establishment of the Rensselaer Institute at Troy, and of the University at Virginia, are important events in the history of American Education.

(15.) The labors of Mrs. Emma Willard, at Troy, of Rev. Joseph Emerson, at Wethersfield, of Miss Beecher, at Hartford, of Miss Grant, at Ipswich, of Miss Lyon, at South Hadley, as well as the earlier labors of Miss Pierce, at Litchfield, and Rev. Mr. Herrick, at New Haven, will not be forgotten.

1830, and especially the formation of the Society for the improvement of common schools at Hartford, in 1827, and of the Pennsylvania Society for the promotion of public schools in 1828 :

In these and other ways, this movement in behalf of the more general, tho rough, and complete education of the people, had given indications of the earnest and well-directed labors of many persons, acting in widely separated and isolated spheres, and ready for mutual counsel and coöperation as soon as any plan of association should be proposed.

One movement* toward such an organization, although it did not attain to any formal shape, publicly recognized, yet contributed to prepare the way for the formation of the American Institute of Instruction, was the action of a society, embracing nearly fifty prominent active friends of education, in the professions, in practical life, and in the occupation of teaching.

"The society here referred to was formed in consequence of invitations issued by Mr. Thomas B. Wait,† publisher of the *Journal of Education*, to a meeting held, in the autumn of 1826, at the study of Professor George Ticknor, of Boston. At this meeting, the subject was fully discussed, and a hearty pledge of coöperation mutually given; and, Professor Ticknor was appointed chairman of a committee to prepare a statement‡ of the plan and purposes of the proposed association. This statement was inserted in the *American Journal of Education*, Vol. I, p. 485.

"The society thus originated, contemplated an extensive scope of operation in the whole field of education. At weekly meetings, held for successive months, the business proposed was fully and thoroughly discussed; plans were matured for the assignment of the prominent branches and stages of education to special committees, and for an extensive investigation into the actual condition of schools and other seminaries, with full reports on the same; and, the *Journal of Education* was adopted as the channel of communication for such purposes. But, one step remained to be taken for the commencement of active measures, and the public announcement of the formation and design of the associa-

* The following statement is made on the authority of Prof. William Russell, at that time editor of the *American Journal of Education*, and teacher of Elocution and English Literature in Boston.

† Mr. Thomas B. Wait, of Boston, a practical printer and publisher, projected the publication of the *American Journal of Education* in the fall of 1825. He became deeply interested in the subject of education, during his residence in Portland, Maine, by the movements there made for the introduction of a graded system of public schools for that city. The first Number of the *Journal* was issued in the 1st of January, 1825.

‡ The statement referred to, was published in Vol. I, of the *American Journal of Education*, p. 485, and presents in a clear and forcible manner the reasons for a combined and concentrated effort of men eminent and active in literature, science, and public life, for the advancement of education. Among the objects proposed for immediate attention, are :

1. Discussion of Domestic Education, and the establishment of Infant Schools.
2. The professional education and improvement of teachers.
3. The collecting of a Library of useful books on Education.
4. The Improvement of School Books.
5. Making and bringing together observations on schools of different grades in different localities.
6. Central and associated Committees.

tion. This step was the appointment of a person to act as representative and agent of the society in the business of visiting schools, reporting on their condition, and making such suggestions as, in the circumstances, might seem desirable, in the opinion of the several committees, acting in concert with the agent. The person to whom the agency was proposed, having declined, on the ground of double occupation already incurred, in the daily duties of teaching and editing, the members of the society were unable to unite upon one on whose fitness for the office all could agree; and, as the agency proposed seemed to sum up the whole useful action proposed by the association, it was deemed preferable to dissolve it, rather than to incur the risk of issuing statements or proposals, through an authorized agent, which might be at variance with the opinions or the convictions of individual members. A dissolution accordingly took place. But, the many important facts and interesting discussions which had been brought out at the preliminary meetings of the embryo association, had made so deep an impression on the minds of several of the individuals concerned in the undertaking proposed, that these same persons took a prominent part in originating another association, designed for similar purposes to those of the former, and planted on a wider and securer ground plan. The new society was the American Institute of Instruction, which has since rendered so effectual service to the advancement of education, by its annual meetings and instructive lectures, and whose designation so happily foreshadows the recognition of the teacher's occupation as a liberal profession."

The meeting or convention which assembled in Columbian Hall, Boston, on the 15th of March, 1830, was called and held under the auspices of gentlemen actively engaged in the Lyceum movement.

The call was issued in the name of the "State Committee of Lyceums," and the objects as set forth in an editorial notice widely copied in the New England papers, was "to receive reports on the progress of lyceums and the condition of common schools, and to acquire information as to the organization of infant schools, and the use of school and cheap scientific apparatus." The meeting was called to order by Josiah Holbrook, who stated the objects, among which was, "to acquire information on subjects connected with the office and duty of teachers." The meeting was organized by the appointment of Rev. J. Going, of Worcester, Chairman, and Rev. E. K. Newton, of Marlborough, and J. Wilder, of Watertown, as clerks, and a Committee of arrangements, of which Josiah Holbrook was chairman. Committees were appointed on school apparatus; on qualification of teachers; on school books; on infant school system; on meritorial schools, and on the appropriate branches of a system of popular education.

A portion of each day was devoted to visiting the public schools and humane institutions of Boston; to statements respecting the condition of schools, compensation of teachers, text books used in the different New England States; to an exhibition of the practical uses of Holbrook's school and lyceum apparatus; to discussions of the best mode of raising

the qualifications, compensation and social position of the teacher; as to the best mode of securing a uniformity of better text-books; to lectures on physical education; to an exposition of the infant school system and its incorporation into country district schools; to the advantages of employing monitors in the discipline and instruction of large schools; to the usefulness of county and town conventions of teachers; and to associations of teachers as branches of lyceums.

At the session held on the 18th, it having been voted "that it was expedient to form a permanent association of persons engaged and interested in the business of instruction," Messrs. Ebenezer Bailey, Benjamin D. Emerson, Abraham Andrews, George B. Emerson, and Gideon F. Thayer, of Boston, Henry K. Oliver, of Salem, and J. Wilder, of Watertown, were appointed a committee "to digest a plan, and prepare a constitution, for the proposed association," with instructions "to call a meeting for organization, when they should deem it expedient." This committee accordingly met at the house of the chairman, on the 17th of April, resolved to provide for a course of lectures at another meeting of teachers, to which the constitution should be reported. President Wayland, of Brown University, was chosen to deliver the Introductory Discourse, and important subjects were assigned to gentlemen eminent as teachers, or in professions, who had given to the subject, special attention; and Messrs. Ebenezer Bailey, and George B. Emerson, were appointed a sub-committee to supply any deficiency in the choice of lecturers, to fill vacancies, and to add such others as they might consider necessary, and to fill vacancies. Messrs. Andrews, Thayer, and Wilder were appointed a sub-committee to furnish materials for a constitution, and report at the next meeting. The next meeting of the committee was held on the 8th of May, and continued by adjournment at short intervals till July 3d, at which time, the draft of a constitution prepared mainly by Mr. Bailey, was accepted, and Messrs. Bailey, G. B. Emerson, and B. D. Emerson, were appointed a committee of arrangements for the first annual meeting of the proposed association, to be held on the 19th of August, of which, the following notice had already been given in the newspapers.

NOTICE TO TEACHERS.

At a convention, consisting of nearly three hundred teachers and other friends of popular education, from the several Eastern States, which was held in the city of Boston, March 18th, a vote was passed, recommending that a *general association* of persons, engaged and interested in the business of instruction, be formed; and Messrs. E. Bailey, B. D. Emerson, A. Andrews, G. B. Emerson, and G. F. Thayer, of Boston, H. K. Oliver, of Salem, and J. Wilder, of Watertown, were appointed a committee, to make the necessary arrangements, and prepare a constitution; with instructions to call a meeting for the purpose of organizing the association, at such time and place as they should think expedient.

The committee have attended to the duty assigned to them, and hereby give notice that the proposed convention will meet at the State House, in the city of Boston, on Thursday, August 19th, at 8 o'clock, A. M., the House of Representatives having liberally granted the use of their hall for the occasion. All teachers, either of common schools or in institutions of a higher order, and all gentlemen who have ever been engaged in the business of teaching, and who still take an interest in the subject of education, are respectfully invited to attend the meeting, and become members of the association, in whatever part of the country they may reside.

It is expected that the annual exhibition of the public schools for boys, in Boston, will take place the day before that designated for the meeting of the convention; and the Commencement at Harvard University will be on Wednesday of the following week. As those gentlemen who may come from a distance will probably wish to be present at both of these literary

anniversaries, the committee have thought that the intermediate time may be both pleasantly and profitably occupied by a series of plain and practical lectures, on important subjects connected with education; and, they have the satisfaction of announcing the following arrangements for this purpose. As many lectures will be delivered daily as may be necessary to complete the course in the time specified above.

The public Introductory Address will be delivered by the Rev. Dr. Wayland, President of Brown University, Providence, R. I.

Lectures on the following subjects will be given in such order, and at such times during the week, as the convenience of the several lecturers may require.

On Physical Education. By John C. Warren, M. D., of Boston.

On the construction and furnishing of school-houses, and on school-apparatus. By Mr. William J. Adams, of New York.

On school discipline. By Rev. Samuel R. Hall, of Concord, Vermont.

On the infant school system of education, and the extent to which it may be profitably applied to all primary schools. By Mr. William Russell, late editor of the Journal of Education, of Milton, Mass.

On the advantages and defects of Monitorial instruction, and the expediency of introducing this method of teaching into common schools and academies. By Mr. H. K. Oliver, of Salem, Mass.

On the spelling of words, and a rational method of teaching their meaning. By Mr. G. F. Thayer, of Boston.

On Elocution, with a particular reference to the teaching of reading. By Rev. John Pierpont, of Boston.

On a practical method of teaching Rhetoric. By Professor Newman, of Bowdoin College, Maine.

On English Grammar. By Mr. E. Bailey, of Boston.

On teaching Geography. By James G. Carter, Esq., of Lancaster, Mass.

On teaching Arithmetic. By Warren Colburn, Esq., of Lowell, Mass.

On Geometry and Algebra, as important branches of education, with the manner of teaching them. By Mr. Francis J. Grund, of Boston.

On Linear Drawing, connected with Penmanship, as an elementary branch of education. By Mr. Walter R. Johnson, of Philadelphia.

On the culture and development of the several faculties of the human mind, in their proper order and degree. By Mr. G. B. Emerson, of Boston.

On Lyceums and Societies for the diffusion of useful knowledge. By Mr. N. Cleveland, of Newbury, Mass.

On the study of the learned languages, as a means of improving the intellectual powers, and fitting the mind for other pursuits. By Mr. C. C. Felton, of Cambridge, Mass.

Although it is not expected that *ladies* will become members of the association, all such as are actually engaged in teaching, are respectfully invited to attend the lectures.

By order of the Committee,

E. BAILEY *Chairman*.

GEORGE B. EMERSON, Corresponding Secretary.

Boston, June 10, 1830.

The convention met on the 19th of August, 1830, at the State House, in the Hall of the House of Representatives, at Boston. It was composed of over two hundred persons, most of them actual teachers, from fifteen different States of the Union. It was organized by the choice of William B. Calhoun, of Springfield, as Chairman, and George B. Emerson and Dr. J. W. M'Kean, of Boston, as Secretaries. The Introductory Discourse was delivered by Rev. Francis Wayland, President of Brown University, "*On the Object of Intellectual Education, and the manner in which that object is to be attained.*" The speaker opened and closed with these prophetic and pregnant sentences in reference to the occasion.

"In the long train of her joyous anniversaries, New England has yet beheld no one more illustrious than this. We have assembled to-day, not to proclaim how well our fathers have done, but to inquire how we may enable their sons to do better. We meet, not for the purposes of empty pageant, nor yet of national rejoicing; but, to deliberate upon the most successful means for cultivating, to its highest perfection, that invaluable amount of intellect which Divine Providence has committed to our hands. We have come up here to the city of the Pilgrims, to ask how we may render their children most worthy of their ancestors and most pleasing to their God. We meet to give to each other the right hand of fellowship in carrying forward this all-important work, and here to leave our professional pledge, that, if the succeeding generation do not act worthily, the guilt shall not rest upon those who are now the Instructors of New England.

Well am I aware that the occasion is worthy of the choicest effort of the high-

est talent in the land. Sincerely do I wish, that upon such talent the duty of addressing you this day had devolved. Much do I regret that sudden indisposition has deprived me of the time which had been set apart to meet the demands of the present occasion, and that I am only able to offer for your consideration such reflections as have been snatched from the most contracted leisure, and gleaned amid the hurried hours of languid convalescence. But, I bring, as an offering to the cause of Education, a mind deeply penetrated with a conviction of its surpassing importance, and enthusiastically ardent in anticipating the glory of its ultimate results. I know, then, that I may liberally presume upon your candor, while I rise to address those to many of whom it were far more becoming that I quietly and humbly listened."

"To the members of this Convention, allow me to say, Gentlemen, you have chosen a noble profession. What, though it do not confer upon us wealth?—it confers upon us a higher boon, the privilege of being useful. What, though it lead not to the falsely-named *heights* of political eminence?—it leads us to what is far better, the sources of real power; for it renders intellectual ability necessary to our success. I do verily believe that nothing so cultivates the powers of a man's own mind as thorough, generous, liberal, and indefatigable teaching. But our profession has rewards, rich rewards, peculiar to itself. What can be more delightful to a philanthropic mind than to behold intellectual power increased a hundred fold by our exertions, talent developed by our assiduity, passions eradicated by our counsel, and a multitude of men pouring abroad over society the lustre of a virtuous example, and becoming meet to be inheritors with the saints in light—and all in consequence of the direction which we have given to them in youth? I ask again, what profession has any higher reward?

Again, we, at this day, are, in a manner, the pioneers in this work in this country. Education, as a science, has scarcely yet been naturalized among us. Radical improvement in the means of education is an idea that seems but just to have entered into men's minds. It becomes us to act worthily of our station. Let us, by all the means in our power, second the efforts and wishes of the public. Let us see that the first steps in this course are taken wisely. This country ought to be the best educated on the face of the earth. By the blessing of Heaven, we can do much toward the making of it so. God helping us, then, let us make our mark on the rising generation."

The draft of a Constitution was reported by the Chairman of the Committee appointed at the meeting held in March, which, after a prolonged discussion of the several articles, and, after a few alterations, was unanimously adopted as the—

CONSTITUTION OF THE AMERICAN INSTITUTE OF INSTRUCTION.

Preamble.—We, whose names are hereunto subjoined, pledging our zealous efforts to promote the cause of popular education, agree to adopt the following Constitution, and to obey the By-Laws made in conformity thereto.

Article I.—Name and Object.—The Society shall be known by the title of the AMERICAN INSTITUTE OF INSTRUCTION. Its object shall be the diffusion of useful knowledge in regard to education.

Article II.—Members.—1. Any gentleman of good moral character, interested in the subject of education, may become a member of this Institute, by signing this Constitution, and paying, at the time of his admission, a fee of one dollar.

2. An annual assessment of one dollar shall be laid upon each member; by neglecting to pay which for more than one year after due notice from the Treasurer, he shall cease to be a member of the society.

3. Any gentleman, by paying at one time the sum of twenty dollars, shall become a member of the Institute for life, and be exempted from all future assessments.

4. Honorary members may be elected by the Institute, at the recommendation of two-thirds of the Directors present at any stated meeting of that Board.

5. For dishonorable or immoral conduct, a member may be dismissed from the society, by a vote of two-thirds of the members present, at any regular meeting.

6. Ladies, engaged in the business of instruction, shall be invited to hear the annual address, lectures, and reports of committees on subjects of education.

Article III.—Meetings.—1. The annual meeting of the Institute shall be held at Boston, on the Thursday next preceding the last Wednesday in August, at such place and hour as the Board of Directors shall order.

2. Special meetings may be called by the Directors.

3. Due notice of the meetings of the society shall be given in the public journals.

Article IV.—Officers.—1. The officers of the society shall be a President, Vice-Presidents, a Recording Secretary, two Corresponding Secretaries, a Treasurer, three Curators, three Censors, and twelve Counselors, who shall constitute a Board of Directors.

2. The officers shall be elected annually, in August, by ballot.

Article V.—Duties of Officers.—1. The President, or, in his absence, one of the Vice-Presidents, or, in their absence, a President *pro tempore*, shall preside at the meetings of the Institute.

2. The Recording Secretary shall notify all meetings of the society, and of the Board of Directors; and he shall keep a record of their transactions.

3. The Corresponding Secretaries, subject to the order of the Board of Directors, shall be the organs of communication with other societies, and with individuals.

4. The Treasurer shall collect and receive all moneys of the Institute, and shall render an accurate statement of all his receipts and payments, annually, and whenever called upon by the Board of Directors; to whom, he shall give such bonds for the faithful performance of his duty as they shall require. He shall make no payment, except by their order.

5. To the Board of Directors shall be entrusted the general interests of the society, with authority to devise and carry into execution such measures as may promote its objects. It shall be their duty to appoint some suitable person to deliver an address before the Institute, at their annual meeting; to select competent persons to serve on Standing Committees, or to deliver lectures on such subjects relating to education as they may deem expedient and useful; to collect such facts as may promote the general objects of the society; and to provide convenient accommodations for the meetings. They shall, at the annual meeting, exhibit their records, and report to the Institute.

They shall have power to fill all vacancies in their Board from members of the society, and make By-Laws for its government.

6. It shall be the particular duty of the Curators to select books, and to take charge of the Library of the Institute.

7. The Censors shall have authority to procure for publication the annual address and lectures. It shall be their duty to examine the annual reports of the Standing Committees, and all other communications made to the society; and, to publish such of them as, in their estimation, may tend to throw light on the subject of education, and aid the faithful instructor in the discharge of his duty.

8. It shall be the duty of the President, the Vice-Presidents, and Counselors, severally, to recommend to the consideration of the Board of Directors, such subjects of inquiry, as, in their opinion, may best advance the great objects of the Institute.

9. Stated meetings of the Board of Directors shall be held at Boston, on the first Wednesday in January; on the last Wednesday in May; and, on the day next preceding that of the annual meeting of the Institute in August.

Article VI.—By-Laws and Amendments.—1. By-Laws, not repugnant to this Constitution, may be adopted at any regular meeting.

2. This Constitution may be altered or amended by a vote of two-thirds of the members present at the annual meeting, provided two-thirds of the Directors, present at a stated meeting, shall agree to recommend the proposed alteration or amendment.

The Committee had proposed to call the society *The New England Association of Teachers*; but, as several of the Middle, Southern, and Western States, were represented in the Convention, and many persons, not teachers, were desirous of belonging to the society, a more comprehensive name and plan on the motion of the Rev. John Pierpont, was adopted.

The Constitution has been slightly modified from time to time, so as to relieve members of all annual payments, after paying the admission fee of one dollar, and leaving the time and place of the annual meeting, both of the Institute and of the Directors, to be fixed by the Directors.

The Institute was organized, on the 23d of August, by the election of the following board of officers, from 1830 to 1831, whose names it was directed to be published, without titles.

OFFICERS OF THE AMERICAN INSTITUTE OF INSTRUCTION FOR THE YEARS 1830–31.

President.—Francis Wayland, Jr., President of Brown University, Providence, R. I.

Vice-Presidents.—Wm. B. Calhoun, Springfield, Mass.; Wm. Sullivan, Boston, Mass.; John Adams, Andover, Mass.; John Park, Boston, Mass.; Nathan Lord, President of Dartmouth College, Hanover, N. H.; Thos. H. Gallaudet, Hartford, Ct.; Andrew Yates, Chittenango, N. Y.; Theodore Frelinghuysen, Newark, N. J.; Roberts Vaux, Philadelphia, Pa.; Wm. C. Fowler, Middlebury, Vt.; Reuben Haines, Germantown, Pa.; Benjamin O. Peers, Lexington, Ky.; Nathan Guilford, Cincinnati, Ohio.

Recording Secretary.—Gideon F. Thayer, Boston, Mass.

Corresponding Secretaries.—Solomon P. Miles, Boston, Mass.; Wm. C. Woodbridge, Hartford, Ct.

Treasurer.—Benjamin D. Emerson, Boston, Mass.

Curators.—Abraham Andrews, Josiah Holbrook, Boston, Mass.; William Russell, Milton, Mass.

Censors.—Ebenezer Bailey, Jacob Abbot, George B. Emerson, Boston, Mass.

Counselors.—Wm. J. Adams, New York; James G. Carter, Lancaster, Mass.; Joseph Emerson, Wethersfield, Ct.; C. C. Felton, Cambridge, Mass.; Wm. Forrest, New York, N. Y.; Walter R. Johnson, Philadelphia, Penn.; J. Knzsbury, Providence, R. I.; Samuel P. Newman, Professor in Bowdoin College, Brunswick, Me.; Henry K. Oliver, Salem, Mass.; Asa Rand, Boston, Mass.; O. A. Shaw, Richmond, Va.; Elipha White, John's Island, S. C.

The lectures provided by the Committee of Arrangements were delivered, and followed by animated discussions, and reports were made by gentlemen from various parts of the country of the state of education in their respective vicinities. In view of the high literary and educational character of the lectures, and the attendance generally, the Committee, in the Preface to the First Volume of Proceedings, written by Mr. George B. Emerson, justly remark,—

“Many a teacher, on the first morning of the convention, must have ascended the steps that lead to the Hall of Representatives, and looked out upon the unequalled prospect commanded by this chosen spot in the ‘city of the pilgrims,’ with a sense of loneliness, and of doubt and misgiving; but when he beheld the numbers that came flocking from near and distant parts, and saw the earnestness with which they were engaged in the good cause, and the ability evinced in conducting the business of the convention, every one must have gone home to his solitary duties, strengthened and cheered by the thought, that strong hands were in the work, and that he was no longer toiling alone.

The formation of the Institute, it is hoped, will do something toward elevating the standard and increasing the efficiency of popular instruction.

It will furnish the means, by the coöperation of its members, of obtaining an exact knowledge of the present condition of the schools, in all parts of the country. It will tend to render universal, so that it shall pervade every district and village, a strong conviction of the paramount national importance of preserving and extending the mass of popular instruction; thus securing the aid of multitudes of fellow laborers in every portion of the country. It will tend to raise the standard of the qualifications of instructors, so that the business of teaching shall not be the last resort of dullness and indolence, but shall be considered, as it was in the days of republican Greece, an occupation worthy of the highest talents and ambition. It will hardly fail to show that education is a science, to be advanced, like every other science, by experiment; whose principles are to be fixed, and its capacities determined, by experiment; which is to be entered upon by men of a philosophical mind, and pursued with a philosophical spirit. It will be likely to bring forward the modes and objects of instruction in foreign nations and ancient times, and their applicability to the state of things among ourselves. It cannot fail to enlist openly, on the side of popular education, the highest intellect and influence in the nation. If it accomplish these, or any of these objects, it will amply reward the labors of all who have acted in its formation. And that it will have this *tendency*, the feelings of the teachers who attended the convention, may be appealed to, in proof. Great numbers of these had come hundreds of miles, some more than five hundred, to be present on this occasion.”

In 1831, the society was incorporated by an act of the legislature of Massachusetts, and in 1835, principally through the exertions of James G. Carter, then a member of the House, an appropriation of three hundred dollars a year, for five successive years, was made by the same legislature in aid of the objects of the Institute. This grant has been, from time to time, renewed, and has done much to secure the permanence and extend the usefulness of the association.

Year after year, for twenty-six years, the Institute has continued to hold an annual session in one of the principal cities or towns of New England, which has occupied three or four days, and which has been spent in lectures, reports, and discussions on topics of educational interest, in which men eminent in their respective professions, and principally teachers, have taken part. These meetings have been attended annually by hundreds of teachers, school officers, and promoters of educational improvement; and, in the evening sessions, by thousands of parents.

The following TABLE exhibits at a glance the time and place where each Annual Meeting has been held, and the number of lectures which have been delivered at each session, and the number of these which have been published in the annual volume.

Date.	Place.	President.	Lectures.	
			Delivered.	Published.
1830	Boston, Mass.,	Francis Wayland,	18	14
1831	" "	Francis Wayland,	15	10
1832	" "	Francis Wayland,	13	8
1833	" "	William B. Calhoun,	12	11
1834	" "	William B. Calhoun,	16	12
1835	" "	William B. Calhoun,	18	14
1836	" "	William B. Calhoun,	8	8
1837	Worcester, Mass.,	William B. Calhoun,	17	11
1838	Lowell, Mass.,	William B. Calhoun,	15	8
1839	Springfield, Mass.,	William B. Calhoun,	12	10
1840	Providence, R. I.,	James G. Carter,	14	7
1841	Boston, Mass.,	George B. Emerson,	12	8
1842	New Bedford, Mass.,	George B. Emerson,	8	5
1843	Pittsfield, Mass.,	George B. Emerson,	12	9
1844	Portland, Maine,	George B. Emerson,	11	10
1845	Hartford, Conn.,	George B. Emerson,	11	10
1846	Plymouth, Mass.,	George B. Emerson,	10	8
1847	Concord, N. H.,	George B. Emerson,	7	3
1848	Bangor, Maine,	George B. Emerson,	8	5
1849	Montpelier, Vt.,	Gideon F. Thayer,	14	8
1850	Northampton, Mass.,	Gideon F. Thayer,	11	6
1851	Keene, Mass.,	Gideon F. Thayer,	10	7
1852	Troy, N. Y.,	Gideon F. Thayer,	11	6
1853	New Haven, Conn.,	Thomas Sherwin,	8	3
1854	Providence, R. I.,	Thomas Sherwin,	5	5
1855	Bath, Maine,	Thomas Sherwin,	6	5
1856	Springfield, Mass.,	John Kingsbury,		

These successive annual meetings have "promoted the cause of popular education."—1. By bringing teachers in every class of schools, and from all parts of the country, together, to the number of several hundred every year, to spend three or four consecutive days in familiar conversation, or in listening to lectures and discussions on subjects connected with the advancement of their common profession. 2. By the publication of able addresses and papers on the organization and administration of public schools, their studies, and methods of instruction and discipline.

Out of these discussions and publications has resulted improvements in legislation respecting schools, and especially in their supervision, both state and town-wise; in a gradation of schools in cities and large villages; in the introduction of new studies and exercises, such as music, drawing, physiology, branches of natural sciences, and English composition; in improved methods of teaching and illustrating studies before pursued; and, above all, in the establishment of Public High Schools and Normal Schools.

The following Table of Contents and Index to the Proceedings and Lectures is the best evidence of the usefulness of the Institute.

LECTURES AND PROCEEDINGS OF THE AMERICAN INSTITUTE OF INSTRUCTION, from 1830 to 1855.—26 vols.

The first or octavo series, from 1830 to 1839, were published by different houses; the last, or duodecimo series, from 1840 to 1855, are published by Ticknor, Field & Co., Boston.

CONTENTS.—VOL. I, for 1830. Introductory Discourse, by *President Wayland*. *Lecture I.* Physical Education, by *John C. Warren, M. D.* *Lecture II.* The Development of the Intellectual Faculties, and on Teaching Geography, by *James G. Carter*. *Lecture III.* The Infant School System, by *William Russell*. *Lecture IV.* The Spelling of Words, and a Rational Method of Teaching their Meaning, by *Gileson F. Thayer*. *Lecture V.* Lyceums and Societies for the Diffusion of Useful Knowledge, by *Nehemiah Clearland*. *Lecture VI.* Practical Method of Teaching Rhetoric, by *Samuel P. Newman*. *Lecture VII.* Geometry and Algebra, by *F. J. Grund*. *Lecture VIII.* The Monitorial System of Instruction, by *Henry K. Oliver*. *Lecture IX.* Vocal Music, by *William C. Woodbridge*. *Lecture X.* Linear Drawing, by *Walter R. Johnson*. *Lecture XI.* Arithmetic, by *Warren C. Cuthbert*. *Lecture XII.* Classical Learning, by *Cornelius C. Feltm*. *Lecture XIII.* The Construction and Furnishing of School-Rooms and School Apparatus, by *William J. Adams*.

VOL. II, for 1831. Introductory Lecture, by *James Walker*. *Lecture I.* Education of Females, by *George B. Emerson*. *Lecture II.* Moral Education, by *Jacob Abbott*. *Lecture III.* Usefulness of Lyceums, by *S. C. Phillips*. *Lecture IV.* Education of the Five Senses, by *William H. Brooks*. *Lecture V.* The Means which may be employed to stimulate the Student without the aid of Emulation, by *John L. Parkhurst*. *Lecture VI.* Grammar, by *Gould Brown*. *Lecture VII.* Influence of Academies and High Schools on Common Schools, by *William C. Frier*. *Lecture VIII.* Natural History as a Branch of Common Education, by *Clement Durgin*. Prize Essay on School-Houses, by *W. A. Ault*.

VOL. III, for 1832.—Introductory Discourse, by *Francis C. Gray*. *Lecture I.* The best Methods of Teaching the Living Languages, by *George Ticknor*. *Lecture II.* Some of the Diseases of a Literary Life, by *G. Heyward, M. D.* *Lecture III.* The Utility of Visible Illustrations, by *Walter R. Johnson*. *Lecture IV.* The Moral Influences of Physical Science, by *John Pierpont*. *Lecture V.* Prize Essay, on the Teaching of Penmanship, by *B. B. Foster*. *Lecture VI.* Nature and Means of Early Education, as deduced from Experience, by *A. B. Alcott*. *Lecture VII.* On Teaching Grammar and Composition, by *Asa Rand*.

VOL. IV, for 1833.—Introductory Lecture, by *William Sullivan*. *Lecture I.* On the Importance of a Knowledge of the Principles of Physiology to Parents and Teachers, by *Edward Reynolds, M. D.* *Lecture II.* The Classification of Schools, by *Samuel M. Burnside*. *Lecture III.* Primary Education, by *Gardner B. Perry*. *Lecture IV.* Emulation in Schools, by *Leonard Withington*. *Lecture V.* The best Method of Teaching the Ancient Languages, by *Alpheus S. Packard*. *Lecture VI.* Jacotot's Method of Instruction, by *George W. Greene*. *Lecture VII.* The best Method of Teaching Geography, by *W. C. Woodbridge*. *Lecture VIII.* Necessity of Educating Teachers, by *Samuel R. Hall*. *Lecture IX.* The Adaptation of Intellectual Philosophy to Instruction, by *Abijah R. Baker*. *Lecture X.* The best Mode of Teaching Natural Philosophy, by *Benjamin Hale*.

VOL. V, 1834.—Introductory Lecture, by *Caleb Cushing*. *Lecture I.* The best Mode of Fixing the Attention of the Young, by *Warren Burton*. *Lecture II.* The Improvement which may be made in the Condition of Common Schools, by *Stephen Farley*. *Lecture III.* Duties of Parents in regard to the Schools where their Children are instructed, by *Jacob Abbott*. *Lecture IV.* Material Instruction and Management of Infant Schools, by *M. M. Carr*. *Lecture V.* Teaching the Elements of Mathematics, by *Thomas Sherwin*. *Lecture VI.* The Dangerous Tendency to Innovations and Extremes in Education, by *Hubbard Winslow*. *Lecture VII.* Union of Manual with Mental Labor, in a System of Education, by *Beriah Green*. *Lecture VIII.* The History and Uses of Chemistry, by *C. T. Jackson*. *Lecture IX.* Natural History as a Study in Common Schools, by *A. A. Gould, M. D.* *Lecture X.* Science of Government as a Branch of Popular Education, by *Joseph Story*.

VOL. VI, for 1835.—Introductory Lecture, by *W. H. Furness*. *Lecture I.* The Study of the Classics, by *A. Crosby*. *Lecture II.* Education for an Agricultural People, by *Samuel Nott, Jr.* *Lecture III.* Political Influence of Schoolmasters, by *E. Washburn*. *Lecture IV.* State and Prospects of the German Population of this Country, by *H. Bokum*. *Lecture V.* Religious Education, by *R. Park*. *Lecture VI.* Importance of an Acquaintance with the Philosophy of the Mind to an Instructor, by *J. Gregg*. *Lecture VII.* Ends of School Discipline, by *Henry L. McKean*. *Lecture VIII.* Importance and Means of Cultivating the Social Affections among Pupils, by *J. Blanchard*. *Lecture IX.* Meaning and Objects of Education, by *T. B. Fox*. *Lecture X.* Management of a Common School, by *T. Dwight, Jr.* *Lecture XI.* Moral and Spiritual Culture in Early Education, by *R. C. Waterston*. *Lecture XII.* Moral Uses of the Study of Natural History, by *W. Channing, M. D.* *Lecture XIII.* Schools of the Arts, by *W. Johnson*.

VOL. VII, for 1836.—*Lecture I.* Education of the Blind, by *Samuel G. Howe, M. D.* *Lecture II.* Thorough Teaching, by *William H. Brooks*. *Lecture III.* Physiology, or "The House I live in," by *William A. Alcott*. *Lecture IV.* Incitements to Moral and Intellectual Well-Doing, by *J. H. Blener*. *Lecture V.* Duties of Female Teachers of Common Schools, by *Daniel Kimball*. *Lecture VI.* Methods of Teaching Education in Schools, by *T. D. P. Stone*. *Lecture VII.* Influence of Intellectual Action on Civilization, by *H. R. Clearland*. *Lecture VIII.* School Discipline, by *S. R. Hall*.

VOL. VIII, for 1837.—Introductory Discourse, by *Rev. Elipha White*. *Lecture I.* Study of the Classics, by *John Mulligan*. *Lecture II.* Moral Education, by *Joshua Bates*. *Lecture III.* Study of Natural History, by *John Lewis Russell*. *Lecture IV.* Comparative Merits of Private and Public Schools, by *Theodore Edison*. *Lecture V.* Elocution, by *David Fosdick, Jr.* *Lec-*

ture VI. Relation between the Board of Trustees and the Faculty of a University, &c., by *Joseph Adams*. Lecture VII. School Reform, or Teachers' Seminaries, by *Charles Brooks*. Lecture VIII. Teaching of Composition in Schools, by *R. G. Parker*. Lecture IX. Evils of the Present System of Primary Instruction, by *Thomas H. Palmer*. Lecture X. Reading and Declamation, by *William Russell*.

VOL. IX, for 1838.—Lecture I. Literary Responsibility of Teachers, by *Charles White*. Lecture II. The Head and the Heart; or, The Relative Importance of Intellectual and Moral Culture, by *Elisha Bartlett*. Lecture III. Vocal Music in Common Schools, by *Joseph Harrington, Jr.* Lecture IV. Model Schools, by *Thomas D. James*. Lecture V. Observations on the School System of Connecticut, by *Denison Olmsted*. Lecture VI. Teaching of English Grammar, by *R. G. Parker*. Lecture VII. Mutual Duties of Parents and Teachers, by *David P. Page*. Lecture VIII. Man, the Subject of Education, by *Samuel G. Goodrich*.

VOL. X, for 1839.—Introductory Discourse, The Education of a Free People, by *Robert Rantoul, Jr.* Lecture I. Physiology of the Skin, by *John G. Metcalf, M. D.* Lecture II. Mind and its Developments, by *Emerson Davis*. Lecture III. A Classic Taste in our Common Schools, by *Luther B. Lincoln*. Lecture IV. Natural Theology as a Study in Schools, by *Henry A. Miles*. Lecture V. Division of Labor in Instruction, by *Thomas Cushing, Jr.* Lecture VI. The Claims of our Age and Country upon Teachers, by *David McKee*. Lecture VII. Progress of Moral Science, and its Application to the Business of Practical Life, by *Alexander H. Everett*. Lecture VIII. The Comparative Results of Education, by *T. P. Rodman*. Lecture IX. Physical Education, by *Abel L. Pierson, M. D.*

VOL. II, NEW SERIES, for 1840.—Lecture I. Intellectual Education in Harmony with Moral and Physical, by *Joshua Bates*. Lecture II. Results to be aimed at in School Instruction and Discipline, by *T. Cushing, Jr.* Lecture III. Duty of Visiting Schools, by *Thomas A. Greene*. Lecture IV. Objects and Means of School Instruction, by *A. B. Muzzey*. Lecture V. Courtesy, and its Connection with School Instruction, by *G. F. Thayer*. Lecture VI. On the Brain and the Stomach, by *Usher Parsons, M. D.* Lecture VII. Common Complaints made against Teachers, by *Jacob Abbott*.

VOL. XII, for 1841.—Lecture I. Best Method of Preparing and Using Spelling-Books, by *Horace Mann*. Lecture II. Best Method of Exercising the Different Faculties of the Mind, by *Wm. B. Fiske*. Lecture III. Education of the Laboring Classes, by *T. Parker*. Lecture IV. Importance of the Natural Sciences in our System of Popular Education, by *A. Gray*. Lecture V. Moral Culture Essential to Intellectual Education, by *E. W. Robinson*. Lecture VI. Simplicity of Character, as Affected by the Common Systems of Education, by *J. S. Dwight*. Lecture VII. Use of the Globes in Teaching Geography and Astronomy, by *A. Fleming*. Lecture VIII. Elementary Principles of Constitutional Law, as a Branch of Education in Common Schools, by *Edward A. Lawrence*.

VOL. XIII, for 1842.—Lecture I. Moral Education, by *George B. Emerson*. Lecture II. Universal Language, by *Samuel G. Howe*. Lecture III. The Girard College, by *E. C. Winsor*. Lecture IV. School Room, as an aid to Self-Education, by *A. E. Muzzey*. Lecture V. Moral Responsibility of Teachers, by *William H. Wood*. Lecture VI. The Teacher's Daily Preparation.

VOL. XIV, for 1843.—Lecture I. The Bible in Common Schools, by *Heman Humphrey, D. D.* Lecture II. The Classification of Knowledge, by *Solomon Adams*. Lecture III. Moral Dignity of the Teacher's Office, by *Prof. I. H. Agnew*. Lecture IV. A few of the "Hows" of School-keeping, by *Roger S. Hoicard*. Lecture V. Advancement in the Means and Methods of Public Instruction, by *David P. Page*. Lecture VI. Reading, by *C. Pierce*. Lecture VII. Some of the Duties of the Faithful Teacher, by *Alfred Greenleaf*. Lecture VIII. Some of the Defects of our Systems of Education, by *R. B. Hubbard*. Lecture IX. Importance of our Common Schools, by *S. J. May*.

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The foregoing Table of CONTENTS, of the twenty-six volumes of Proceedings and Lectures, published annually from 1830 to 1855, gives the leading subjects of two hundred and eleven lectures, by upwards of one hundred and seventy different lecturers, representing almost every profession, and every grade and department of schools and education, and many of them among the most prominent teachers, educators, and scholars of the country. This Table includes only the subject of the lectures printed by the Institute, but does not include the resolutions and topics discussed at the annual meetings, and in nearly one hundred lectures delivered but not printed.

To exhibit the wide range of topics presented, and in most instances discussed with considerable fullness and thoroughness, at the twenty-six annual meetings, embracing over one hundred and twenty-eight days, and as many evenings, as well as the names of the lecturers, including the subjects of the lectures, whether they are published in the annual volume or not, together with the principal subjects brought forward by resolutions or otherwise, the following INDEX is presented. [See Page 241.]

II. WILLIAM LAWRENCE.

WANT teaches us value. They know best how to prize a thing, who are deprived of it, or have never been blessed with its possession. This explains the fact that education, for its wider diffusion, and its enlarged instrumentalities, is greatly indebted to the benefactions of many, who in their youth had themselves but slight participation in its advantages.

If the facilities of Commerce have been multiplied, and her gains increased by the discoveries of science and the inventions of art, commerce has repaid the debt by her rich gifts to schools and colleges, her noble endowment of institutions of learning, at which science can be studied, and art promoted, and many successive generations have the benefit of the highest intellectual and moral culture.

The history of education in all ages and countries, bears some testimony to this fact; New England especially abounds with evidences and illustrations of it. The sneer about "the Almighty Dollar," in connection with American character, is as false as it is silly, and as ungenerous as it is untrue. The New England people are undoubtedly frugal, industrious, enterprising. Like all the rest of the world they love money, they strive to get it, and commonly succeed in obtaining it. But they know how to use and enjoy it. They love it not for its own sake simply, but for what it enables them to do, and as a general remark it may be said, that they do well with it. They have devoted large portions of it, in every generation, to objects of public benefit and blessing.

New England, as regards the Anglo Saxon occupation of her soil, is but little over two hundred years old. She is not without spot or blemish, either in her present condition or her past history, but if we collect the statistics of her beneficence; if we take an inventory of her schools, colleges, hospitals, asylums, the various institutions of learning or philanthropy, which that beneficence has established, endowed, made strong and efficient; the result is honorable alike to human nature and the New England character. It teaches that wealth does not always beget a hard-hearted, selfish man; that many rich in this world's goods, have also been rich in good deeds, and as faithful

stewards of the Lord's bounty, have used their wealth for wise and noble purposes.

Among those entitled to this eulogy, whose names may claim a high place on the list of benefactors to the cause of education, is the late WILLIAM LAWRENCE, who, in common with his brothers Amos and Abbott, of whom we have already given some notices in this Journal, was a noble specimen of a New England merchant, and a Christian citizen and patriot. He was born at Groton, September 7, 1783, and was the third son and child of Samuel and Susan Parker Lawrence, some account of whom may be interesting as indicating the source of the strongly marked characters of their sons. The name of Lawrence dates far back in English history, and has gathered to itself honors in many successive generations. The common ancestor of the New England Lawrences, was John Lawrence, of Great St. Albans, Herefordshire, who came to this country in 1635, and settled at Watertown, where he resided many years, became the father of a numerous family, and the possessor, as the town records show, of many valuable parcels of land. In 1660, he removed to Groton, then recently erected into a plantation or township by order of the General Court, on the petition, with others, of Dean Winthrop, son of Gov. Winthrop. It received its name probably from Winthrop, who came from Groton, Suffolk County, England. Here John Lawrence soon became an honored, trusted, and influential citizen, and here some one or more families of his descendants have ever since resided, identifying the name of Lawrence with the history and character of the town.

Samuel Lawrence was the fifth generation in descent from the above mentioned John Lawrence. He was born in Groton, April, 24th, 1754, and was, therefore, in his early manhood, when our revolutionary struggle commenced. In common with all the hardy, intelligent, liberty-loving yeomanry of New England, he espoused the cause of the colonies, and devoted himself to it with a courage that never failed, a constancy that never faltered till his country had passed "from impending servitude to acknowledged independence." At work in the field, ploughing his paternal acres, when the news of the attack upon Concord, reached Groton; he immediately unloosed a horse from his team, and mounting, rode rapidly through Groton, and some of the adjoining towns, spreading the alarm, and summoning the militia to assemble. He returned in season to join his own company at the church at Groton, at 12 o'clock, where after prayer offered by the pastor of the town, they started for Concord, helped to swell that impetuous tide of resistance which drove back the invaders,

and slept that night on Cambridge Common, after a forced march of thirty miles, and hot skirmishes with the retreating foe. From that time till the peace of '83 he was "a soldier of the Revolution," and, with the exception of one or two brief visits to his family and friends at Groton, he was in actual service throughout the whole war. He rose to the rank of Major, and for a considerable period was attached to General Sullivan's Staff, as adjutant, an office for which his powerful lungs and sonorous voice, which could be heard throughout a long line of troops, peculiarly fitted him. He was in many of the severest battles of the Revolution. At Bunker Hill, where he was slightly wounded, his coat and hat were pierced with the balls of the enemy, and were preserved in the family for many years. At one time he commanded a company whose rank and file were all negroes, of whose courage, military discipline, and fidelity, he always spoke with respect. On one occasion, being out reconnoitering with this company, he got so far in advance of his command, that he was surrounded, and on the point of being made prisoner by the enemy. The "colored boys" soon discovered his peril, rushed to his rescue, and fought with the most determined bravery, till that rescue was effectually secured. He never forgot this circumstance, and ever after took especial pains to show kindness and hospitality to any individual of the colored race, who came near his dwelling.

Mr. Lawrence was married during the war, in the year 1777, to Susanna Parker, and while the marriage ceremony was in progress, the tolling of the bell summoned the minute men to assemble at the church for instant service. The moment the rite was concluded, he parted from his bride and friends and hastened to Rhode Island. He was permitted to return, however, on a brief furlough of two or three days, at the expiration of which he entered again upon active service, from which he had no respite till late in the autumn of 1778, when he visited Groton, rejoicing to find himself a father as well as a husband.

At the close of the war, Major Lawrence settled in Groton, on a beautiful farm on the outskirts of the village, where he passed the remainder of his life, honored and esteemed by his townsmen, who gladly elected him to such offices and honors as he was willing to accept. A man of strong sense, of clear judgment, of stern integrity, of ardent patriotism, and devout piety, his influence was felt, his energies exerted in everything that concerned the social, moral, and religious improvement of the town. He was deacon of the First Congregational church in Groton for more than forty years. He was one of the original founders, and for thirty-three years a Trustee of

Groton Academy, an institution which his sons have since munificently endowed. In the Shay's rebellion, and during all the troubles of 1786-87, he stood firm for the government, and was foremost in advocating the supremacy of the laws. A devout man, strict in all religious observances, firm, almost rigid in the discipline of his family, he was cheerful, joyous, benignant, "given to hospitality," and never so happy as when making happy those around him. The young loved him, and the reverence with which they gathered around him was tempered by the most confiding affection.

He lived to be present at the laying of the corner-stone of the Bunker Hill Monument in 1825; an occasion in which as one of the survivors of that most memorable and important battle of the Revolution, he felt a deep personal interest. The excitements of that week passed in Boston, brought on a paralytic attack, from which he never entirely recovered. He died Nov. 8th, 1827, aged 73.

Susan Parker Lawrence was born in Groton, where her father, William Parker, cultivated a farm, now owned by the town. He subsequently removed to Concord, where he resided several years. Susan, his youngest daughter was distinguished for quiet and gentle manners, a loving spirit, a truly feminine grace and dignity of character; with these qualities were united a nobility of soul, a lofty and indomitable energy, that made honor and reverence to mingle largely in the love borne to her by her husband and children. In illustration of her own energy, as well as of the customs of that period, it may be mentioned that while her father lived at Concord, it was no unusual thing for her to mount a horse, ride to the ferry at Charlestown, a distance of seventeen miles, go over to Boston "shopping," and return to Concord on the same day. From a hill in the rear of her father's residence, in the easterly part of the village of Concord, she saw the British troops enter that town on the morning of the 19th of April, 1776, and remained there till she saw them pass out a retreating and discomfited foe. Like most of the women of that day, she was an ardent patriot, espousing the cause of the colonies with an intense devotion, ready to endure all the trials and make all sacrifices which the interests of that cause demanded; and it may be that not a little of the courage, the perseverance, and fidelity displayed by her lover and husband, amid the perils and hardships of that long struggle for liberty and independence, is to be ascribed to her inspiring influence.

To an extraordinary energy of character, and excellent habits of industry and frugality, which enabled her to manage successfully in the absence of her husband, both the affairs of the farm and of the

household, she added the power of religious faith, and the winning graces of an elevated Christian character. She was eminently a religious woman, governing herself by religious principles in the discipline of her family, and the education of her children; and thus exercising over them, in the forming period of character, a winning and persuasive religious influence. In the earliest recollection of all of them there distinctly abides her hallowed image, kneeling at their bedside and breathing a devout, earnest prayer, for the divine protection and blessing upon their young hearts. Her faith, which had ever adorned her life and character, which made her active, open, honorable and useful, shed a halo of moral beauty and glory around her declining years. Serenely cheerful, still young in her affections and sympathies, devoutly submissive, ready to "abide or to depart and be with Christ;" she presented a most attractive picture of lovely and venerable old age. She survived her husband eighteen years, and died May 2d, 1845, aged 89 years.

Such were the parents of "the Lawrences"—intelligent, virtuous, high principled, devout, ordering their family in the fear of God, and sanctifying all social affections and sympathies, all domestic duty and intercourse by Christian faith and daily prayer. A family thus ordered and pervaded by the spirit of religion, is a miniature of heaven; it is a nursery of virtue to the state, the church, the world. Incalculable blessings and holy influences go forth from it. Here is the point at which to begin the reform of the world,—the family, which is a divine institution, and every scheme of philanthropy, every enterprise of social or civic reform that overlooks or disregards this, will fail. Fidelity in the improvement and education of their householders, preserving good discipline, sound principles, and habits of order there, in making their home the abode of peace, happiness, virtue, religion, so that the generation reared in it, go forth intelligent, honest, pure, strong in virtuous principles, in religious affections and purposes; this is the first grand duty which the heads of a family owe to God, to society, to their children, and to their own souls. Faithful here, they are benefactors of the community to an extent which can not be calculated; negligent in this, they have no claim to be benefactors, though their names stand first among the contributors to any public charity in the land.

Samuel and Susan Parker Lawrence did not fail in this great duty. They made their home eminently a Christian home, and to the influences of this home and of those parents, may be traced all the marked and prominent features in the character of their sons.

Of these sons, William, the subject of this memoir, originally

intended to be a farmer ; a strong constitution, robust health, and a vigorous physical frame, united with a natural love of agricultural pursuits, with which he had been familiar from his childhood, had their influence in producing this determination. But this physical strength was under the direction of an earnest, enthusiastic spirit, that might easily be led to task it beyond what it could bear ; and it was so tasked. In the autumn of 1809, after three or four years of very hard work on the farm, his health failed, and there was so much danger that his strength and constitution would break down entirely, that it was thought best that he should relinquish for a season all laborious occupations, and leaving home, pass the winter quietly with his brother Amos, who had then recently established himself in business in Boston. He accordingly repaired to Boston in October, and during the winter remained with his brother more as a companion than a clerk or an apprentice ; occasionally helping him, and doing so more and more as he became interested and competent, in the sale of goods at the store, and in making purchases at auctions.

When the spring opened he found himself much improved in health, but not strong enough to resume the severe labors that would devolve upon him in the care and culture of his father's farm. He found also that the winter's experience had developed a tact and taste for commercial pursuits, and he determined to change his plan of life and become a merchant. He passed the remainder of the year, therefore, with his brother, adding to his experience and knowledge ; and in 1810, commenced business for himself in a small store near that of his brother Amos, with no capital but his own energies and talent, and the credit which these could procure for him. The fact, that at twenty-six years of age, with only the limited experience of a few months in his brother's store, he passed at once from agricultural to commercial pursuits, and prosecuted the latter from the beginning with an uninterrupted and constantly widening success, is a sufficient evidence both of the energy of his character and the force and capacity of his intellect.

The incidents of his commercial life, are few and simple. He continued in business by himself, gradually enlarging his operations as his means increased, till 1822, when he formed a partnership with his brother Samuel, under the style of W. & S. Lawrence. This union of his own experience and judgment with the fresh energy and talent of his younger brother, made a strong commercial house, whose operations soon became extensive and prosperous. In 1825, W. & S. Lawrence, who had hitherto been chiefly importers, became

interested in domestic manufactures. It was through their agency and influence that the first incorporated company was formed, (the Middlesex Company,) at Lowell, for the manufacture of woolen goods. This enlargement of their operations required an addition to the strength and means of the firm, which was accordingly made. Mr. W. W. Stone became a partner of the house in 1826, and the business was transacted under the firm of W. & S. Lawrence & Stone. In connection with this firm, Mr. Lawrence continued in active business, principally domestic commission business, the manufacture and sale of American woolens, till 1842, when he retired with an ample fortune, partly acquired by his own industry and enterprise, and partly received as his wife's patrimony from her father, William Bordman of Boston, whose daughter Susan, Mr. Lawrence had married in 1813, and who still survives him, together with four children, one son and three daughters, all of whom are married.

In addition to the wise forethought and patriotic enterprise with which he and others encouraged the introduction of domestic manufactures, two events in his commercial career may be briefly noticed. In the movement made by Messrs. Greenough & Cotting, by which Cornhill, leading from Dock Square to Court Street, was opened, Mr. William Lawrence took an active and hearty interest, and was one of the first to occupy one of the stores in the lower part of the new street. This was at that time one of the most important enterprises, and a greater change affecting the convenience of intercourse in the heart of the city, than any that had been attempted. Mr. Lawrence was interested in it, through that feeling which prompted him always to encourage by his influence and means, every enterprise that promised to promote the prosperity and progress of the community.

But as a merchant and a business man, the most signal point in his career, that which proves his clear discernment, not only of the importance to all the interests of trade of an equalized circulating medium, but of the best method of producing such equality of value in the circulating medium of New England, and which entitles him therefore, to the gratitude of the merchants and business men of Boston and the New England States, was his persevering efforts to introduce what is now familiarly known as "the Suffolk Bank System." This Bank was chartered in 1818. Mr. Lawrence was a member of the Board of Directors from its organization up to the time of his death, a period of thirty years. It is not necessary that we should explain this "system" in detail. It is sufficient for us to say that the bills of every bank entering into it, are current at par value, at Boston,

and all over New England. If a trader in the country has a demand to meet in Boston, he can send or bring down the bills of the local bank in his neighborhood; the Boston merchant can receive them without discount, because he can immediately deposit them at the Suffolk Bank, and receive in return Suffolk Bank bills or specie. The effect is obvious, but the value and importance of the arrangement in facilitating all the exchanges of business, or the difficulty of introducing it, can only be justly appreciated by those who are old enough to remember the state of things that existed before it was introduced. Then the merchants and traders of Boston, (formerly the central market of the New England States more than now,) were in the habit of selling the bills of country banks to brokers at a discount which depended upon the distance of the bank from Boston, the difficulty of sending the bills for redemption to the towns where they were payable, a want of knowledge of their responsibility, and other like considerations. There was an inequality and irregularity in the currency, causing great embarrassments and delays in pecuniary transactions. These operated as a great restriction upon trade. To remove it was the object of the "system" introduced and carried to a successful issue by the Suffolk bank. The undertaking was a bold one, and indomitable energy and perseverance were necessary to success. It naturally met with opposition at first, from the sensitiveness of the several states in regard to their currency, and from the prejudices of the smaller and jealousy of the larger towns in the Commonwealth. The earnest advocacy of its friends and the practical working of the system as fast and as far as it prevailed, gradually overcame this opposition. The "system" now embraces all or nearly all the banks in the New England States, and gives to these states a sound and uniform currency, the comforts and advantages of which can not be too highly appreciated.

It is not intended to detract in the least, from the credit due to other early and earnest advocates of the system, (some of whom are still connected with the Suffolk bank, and take a deep interest in its prosperity and usefulness,) when we say that its success is to be attributed in no small degree, to the wise, various and persevering efforts of Mr. William Lawrence.

For these efforts, were there no other cause, he is entitled to the grateful remembrance of the mercantile community.

On retiring from active business in 1842, Mr. Lawrence turned with fresh relish to agricultural pursuits, and the old homestead, and the paternal acres at Groton, became objects of deep interest. He continued to reside in Boston, but the improvement of the farm at

Groton occupied much of his thought, and gave a zest and pleasure to the closing years of his life. His health which had been failing for some time, broke down entirely in the autumn of 1847, and after a lingering illness of ten months, which he bore with Christian fortitude and resignation; he expired on the 14th of October, 1848.

As a citizen and merchant of Boston, Mr. Lawrence was always a cheerful and prominent contributor to every enterprise of Christian benevolence, and to any object that an enlightened patriotism and a broad and generous humanity approved. But in harmony with the purpose of this Journal, his claims as a benefactor to the cause of education, demand our particular attention. These claims are substantiated not simply by the munificence of his gifts to the Lawrence Academy, but also by the wisdom of the manner in which they were bestowed, and the good sense which marked the conditions annexed. The Groton Academy dates its origin from a joint stock organization formed for the purpose, on the 27th of April, 1793. Five pounds constituted a share of this stock. Three hundred and twenty-five pounds were raised by subscriptions, or shares taken by forty-four individuals, all of whom were inhabitants of Groton, except four, who were citizens of Pepperell. The town of Groton subscribed forty shares, on which, however, interest only was to be paid from year to year. Application was made to the General Court for an act of incorporation, which was granted, bearing date September 25th, 1793. Under this act, organization was duly effected, on the 17th of October, 1793, and fifteen persons chosen to constitute the Board of Trustees. In November of that year, the school opened, in the academy building which had been erected for the purpose, and which "stands yet on the same spot where it was originally placed, though at present it is not to be recognized in the pile of improvements which have been built up around it."

Thus small in its beginnings, and slender in its means, was this academy which is now one of the most flourishing and best endowed institutions of its class in New England. For some years the only resources of the school were the tuition fees of the pupils and the interest on the forty shares subscribed by the town of Groton. In 1797, on petition of the Trustees, the General Court made them a grant of one half a township of land in Maine, about eleven thousand five hundred and twenty acres, which was subsequently sold for fifty cents per acre. In 1825, the widow of James Brazer, Esq., one of the original subscribers to the joint stock for the establishment of the school, by her will, made the Trustees residuary legatees of one half

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of her estate, besides leaving them specific legacies of five hundred dollars in money, payable on the death of each of five relations. In 1838 and 1839, Mr. Amos Lawrence made liberal donations of books and philosophical apparatus; and in 1842, he placed in the hands of the Trustees, the sum of two thousand dollars, to be expended according to their judgment, in enlarging and improving the academy building. But these things added but little to the cash funds of the academy, and while they enlarged its instrumentalities, they did little to place it upon a firm and permanent foundation. This it was left for William Lawrence to do, in 1844, by a donation of TEN THOUSAND DOLLARS. This donation was communicated to the Trustees in the following letter :

Boston, April 6th, 1844.

To the Trustees of Groton Academy :—

GENTLEMEN :—Born and educated in Groton, I feel a deep interest in its prosperity, and especially in your academy; an institution which my honored father labored so hard to bring into existence more than half a century ago, and to which I am indebted for what little education I possess.

Having been highly blessed in my temporal concerns, I have thought I could not better dispose of a portion of my abundance than to give to the academy over which you preside, a sum of money, for the advancement of education for all coming time.

I, therefore, hereby give to Groton Academy the sum of ten thousand dollars, and direct that the same shall be invested in such manner, for the benefit of said corporation, as the Trustees thereof shall, from time to time, deem safe and expedient, and that the net income thereof shall be applied in their discretion. I am especially desirous that such compensation shall be paid to the instructors of said academy, as shall secure for it constantly the services of learned persons, perfectly competent to all their duties.

And this gift is, therefore, upon condition that the present rate of charge for instruction in said academy shall not be reduced. But whenever hereafter, in any year, the whole net income of the present funds and property of said Institution, and of the fees received for instruction, added to the net income of said ten thousand dollars, shall be more than sufficient for the payment of liberal salaries to such instructors, so that a balance of said income shall remain unexpended, I request the said Trustees in their discretion, and if they deem it expedient, to pay and distribute such balance, or any of it, to and among such deserving male pupils, in such Institution, preparing for

a collegiate education, as the trustees may think deserving such aid ; but not more than one hundred dollars shall be paid or allowed to any one such pupil in any one year. And in granting such aid, I earnestly request that no regard may be had to any sectarian views entertained by the pupils on the subject of the Christian religion.

You will please draw on Lawrence & Stone, Boston, for said sum of ten thousand dollars, in such sums and at such times as will suit your convenience.

Your obedient servant,

WILLIAM LAWRENCE.

This letter is an honorable testimony to the noble and generous feelings of the writer ; and at the same time the three conditions annexed to the donation,—that there should be no diminution of the tuition fees, but that the income of the ten thousand dollars should be used in procuring the best and most competent teachers, that in case after paying liberal salaries to such, from the other resources of the academy, and the income of this fund, there should remain an unexpended balance, it was to be distributed at the discretion of the Trustees among meritorious students preparing for a collegiate education, and that in such distribution no regard should be had to any sectarian views entertained by the pupils on the subject of the Christian religion, are alike indications of Mr. Lawrence's practical wisdom, his sound judgment and his comprehensive charity. A special meeting of the Trustees was called to acknowledge this, the largest and most generous donation which they had at that time received ; and on their petition to the General Court, the next winter, at the session of 1845, the corporate name was changed from "Groton Academy," to the "Lawrence Academy at Groton."

In 1846 Mr. William Lawrence made to this institution another donation of five thousand dollars to be expended under the direction of the Trustees in enlarging and improving the academy building, procuring a bell, ornamenting the grounds, &c., &c. ; and during the same year Mr. Amos Lawrence purchased the residence of the late James Brazer, Esq., adjoining the academy lot, and presented it to the Trustees for the use of the successive preceptors of the academy.

Thus furnished with an enlarged and improved academy building, valuable additions to its library and philosophical apparatus, an elegant and commodious residence for the preceptor, and ten thousand dollars in funds, the institution was placed upon a secure and permanent foundation. Public attention was naturally directed to it, its scholars increased in number, its standard of education was elevated, its usefulness enlarged and extended, and had nothing further been

done, the propriety of the appellation, "the Lawrence Academy at Groton" would have been justified, and all who bore that family name might have felt a deep satisfaction in its past history, and its present and prospective usefulness.

Whether Mr. William Lawrence originally determined to give something more to this institution at his death, or whether that determination was produced by an observation of the good effected by his former donations, can not be clearly ascertained. Probably the purpose of further endowment was entertained, but left contingent upon the result of that observation. Always Mr. Lawrence exhibited one of the sure evidences of a pure heart, uncontaminated by those evil influences of wealth which beget pride, haughtiness, a selfish and worldly heart. He delighted in the memories and associations of his childhood and youth. The old homestead was a hallowed spot in his affections, of which nothing could take precedence. The friends of his early days, the people and the interests of his native town were never forgotten. There was something holy and reverent in his feelings toward Groton, and this feeling, always fresh and strong, increased both in tenderness and strength, as life waned, and he felt its end approaching. It was this feeling united with the clear observation of the good already done, that produced the munificent donation contained in the following codicil to his will.

"Desirous to increase the usefulness of the Lawrence Academy in Groton, and to place its prosperity, (as far as I can do so,) on a secure foundation, I have, at different times heretofore, made donations for its benefit, and have also made provision for it in my will. But, upon reflection, I am induced to apprehend that what I have thus done may not be sufficient to accomplish the objects I have in view. Therefore, I hereby revoke the bequest contained in my said will, of ten thousand dollars to the Trustees of the Lawrence Academy at Groton, and I hereby give to the Trustees of the Lawrence Academy at Groton, aforesaid, their successors and assigns forever, the sum of twenty thousand dollars, to be paid to the said corporation, within one year after my decease, without interest, to be held by them, as a permanent public corporate body, specially charged with the care and superintendence of education, upon the following trusts; that is to say, carefully to manage and invest the said sum of twenty thousand dollars as they shall deem most safe and advantageous, having more regard to the safety of the principal, than the amount of income; to collect and receive the interest and income thereof; to deduct therefrom, and pay all such necessary and proper charges as may be incurred in the management of the said trust fund; and to apply the

net interest and income of said twenty thousand dollars, or of the property in which it may be vested, to and for the following purposes, viz.: to add one thousand dollars of said net income annually, to the said principal sum, (so that it shall become part thereof,) until the whole principal fund held under this codicil shall amount to thirty thousand dollars; which shall forever afterwards be taken and deemed to be the principal trust fund; to apply the residue of the net interest and income of said twenty thousand dollars until said trust fund shall amount to thirty thousand dollars, and afterwards to apply the whole net income and interest of said trust fund of thirty thousand dollars to the payment of the expense of keeping the buildings of said corporation at all times sufficiently insured by some safe Insurance Company or Companies in said commonwealth, to the payment in whole or in part (in their discretion,) of the salaries and compensation of any instructor or instructors at said academy; to aid in the maintenance and education, at said academy of any such meritorious persons as may resort thither for instruction, who may in the opinion of said Trustees deserve and need such assistance, by advances as gifts or loans, (in the discretion of said Trustees,) not exceeding one hundred dollars to any one such student in any one year; and to apply such portion of said net income, as said Trustees may from time to time deem expedient, to the purchase of books for the library of said academy, and philosophical and other instruments for the use of the pupils.

“Whenever, and as often as from losses or other cause the said principal fund shall be less than thirty thousand dollars, I direct that one thousand dollars of the net income of the residue of said fund shall be added annually to the principal, until the whole fund shall amount to thirty thousand dollars, and whenever the capital fund shall sustain a loss or diminution of less than one thousand dollars, then and in every such case, and within one year afterwards, sufficient of said net income shall be taken and added to the principal to make the sum thirty thousand dollars. I earnestly enforce it on all those who may have the care and management of the funds and property given by me for the benefit of said academy, to invest the same with the utmost caution and prudence; to appropriate the net income as herein directed, and in applying portions of it to the benefit of deserving students, as herein provided, to do so without favor or partiality, and without regard to the religious sect to which any such student may belong, provided he be a Christian and a Protestant.”

We lay the whole codicil before our readers, because we wish to do justice not simply to the benevolence of Mr. Lawrence, but to his

wisdom, his practical good sense, and sound judgment. These are strikingly manifest in this codicil. Every thing that ought to be left to the discretion of the Trustees, is entrusted to their decision from year to year, while every provision, condition, and restriction introduced, is marked by a wise forethought, a large, comprehensive prudence. The fund is charged with the expense incident to its proper care and management, with an insurance to be constantly had on the building belonging to the academy, and provision is made that the income shall be used to keep the capital sum up to the amount of thirty thousand dollars, in case it should at any time through bad investments or other causes be diminished. The wisdom of this last provision is obvious. Unless the whole should be at once and irretrievably lost, which is altogether improbable, it secures to the academy for all coming time, a capital of thirty thousand dollars, a sum sufficient to insure a perpetual prosperity and usefulness. Meeting these conditions, the Trustees are at liberty to use the income in paying the salaries of teachers either in whole or in part, in aiding indigent students either by an outright gift or by a loan for such term of time as they see fit, the amount in each case not to exceed one hundred dollars, or in purchasing books, philosophical and other instruments for the use of the pupil. Here all the great interests of the institution, its buildings, its teachers, its students, its library and philosophical apparatus are covered and secured by this codicil, and a large liberty is given to the Trustees to determine from year to year, to which of these objects and in what proportions they will appropriate the income of the fund intrusted to them.

In this codicil, as well as in his other gifts to the academy at Groton, Mr. Lawrence showed himself to be a wise and enlightened, as well as generous benefactor of the great cause of education, and as such his name deserves to be held in remembrance and honor.

The importance resulting from the permanent character of his donations to Lawrence Academy, is justly described by the Rev. Mr. Means in his discourse delivered before the Alumni of the school, at the jubilee held July 12th 1854. Speaking of Messrs. William and Amos Lawrence, as the benefactors of Groton Academy, he says "There was a singular difference in the character of these two brothers, and there is a similar difference in the results of their benefactions. I have reason personally to know that they conferred frequently and earnestly respecting the parts which they should severally perform in upbuilding this school. There was an emulation, but there was no selfishness, there was no difference of opinion; both loved the academy, wished to bless it and to make it a blessing; each desired

to accommodate the feelings of the other ; each was unwilling to interfere with the other ; each was ready to do what the other declined. Mr. William Lawrence was older in years, but he was later in commercial experience. He was firmer in health, and had less occasion, in the experience of bodily pain and dangerous illness than his brother, to lay to heart the injunction, "make unto yourselves friends of the unrighteous mammon, that when ye fail, they may receive you into everlasting habitations." But though he began later, in respect to the amount bestowed upon this school, he was not behind his brother. On the contrary, he was before him. He gave more ; and more of what he gave remains to this day in a productive form. Out of more than forty-five thousand dollars provided for the academy by Mr. William Lawrence, forty thousand will remain in the hands of the Trustees, for purposes of instruction ; while out of all that was given by Mr. Amos Lawrence, not one single cent was designed to be or now remains among the cash funds of the academy."

To William Lawrence then, belongs the credit of the endowment of the Lawrence Academy at Groton, with a cash fund of forty thousand dollars, guarded by wise provisions, which secure thirty thousand in perpetuity, while in the distribution of the income, they leave a large liberty of choice and discrimination to the Trustees. The wisdom and benevolence of his conduct in this noble benefaction to the cause of education, indicate the two simple elements of his character. He was a man of sound judgment, of strong practical common sense, and of a large and kindly heart ; and one source of his wise and sound judgment was his pure heart. He had no selfish or sinister ends to accomplish, the desire to accomplish which so often darkens the conscience, bewilders and misleads the judgment. Undoubtedly he had that desire of success and accumulation, which naturally accompanies every man in the enterprises of trade and commerce, but this success was to be accomplished by an open, manly, straight-forward honesty. "There were no disguises, concealments, subterfuges, pretences, or pretensions about him ; all was plain, simple, frank, open as the day to all the world." Not eaten up with an intense *personal* anxiety, accustomed to look at all matters in the light of their broad relations to the interests of the whole community, his mind was clear to discern that which was wise, right, best, and his heart free to love and pursue it. The profound declaration of Scripture, "out of the heart are the issues of life," found its fulfillment and illustration in him. A good heart, kind, tender, sympathizing, benevolent, strong in its affections, generous in its impulses, devout in its emotions, quickened and sanctified by a deep sentiment

of religious faith, reverence, and responsibility, this was the inspiring and controlling element of his character. A good heart gave him a clear head, a sound judgment, a wise discrimination. A good heart, deeply conscious of its responsibility to its maker, filled with a love of God that unfolded itself in love and good will to man, this made him pure as well as wise, his career honorable as well as successful, his life useful, his death peaceful, his memory to be revered and honored,—that “memory of the just which is blessed.”

It is as a simple act of justice to that memory that we put upon the pages of the American Journal of Education, this notice of one, who in his just appreciation of the importance of our New England academies, and in his wise and munificent endowment of one of these primary institutions of learning, has a strong claim to our grateful remembrance, as a faithful and efficient friend of the great cause of education, which we seek to promote. “Go thou and do likewise,” is the voice of instruction with which his example speaks to many a wealthy son of New England.

III. LAWRENCE ACADEMY.

GROTON, MASS.

BY REV. CHARLES HAMMOND.

LAWRENCE ACADEMY was incorporated by the Legislature of Massachusetts, with the title of "GROTON ACADEMY," in an act which was passed September 25th, 1793. Its present name was conferred by the Legislature of 1846, in accordance with the wishes of the Trustees, in honor of two of its greatest benefactors, WILLIAM and AMOS LAWRENCE, who were natives of the town of Groton.

This Academy is one of the oldest schools bearing that name, in the state of Massachusetts. Prior to the war of the Revolution, it is not known that there were more than two academies in the state;—Dummer Academy, at Byfield, and Phillips Academy, at Andover. Leicester Academy was founded just after the war in 1784.

The motives which led to the founding of Groton Academy, were well set forth in the following extract from a speech made by the late Hon. Abbott Lawrence at the Jubilee Festival of Lawrence Academy, in 1854.

"About the year 1792, a want of education of a higher character, than could be obtained at the common district schools, was sensibly felt. The men who achieved our Independence were not unmindful of the education of their children. They were poor in purse, but rich in public spirit, justly believing that civil liberty could not be maintained without education, religion, and law. These veterans set themselves to work to lay the foundation of an Academy, which was accomplished after much trial and tribulation."

In furnishing a brief sketch of the history of this academy, it is proper at the outset to indicate the sources from whence we have derived the facts of our narrative. These are chiefly the history of Groton, by Caleb Butler, and the historical address of Rev. James Means, delivered at the festival to which we have already alluded.

Both these gentlemen were instructors in the academy for a longer time than any other head master; the former for nearly twelve years; the latter for a term of nearly seven years. Mr. Butler was Principal in the early part of the century, and was personally acquainted with nearly all the founders of the academy.

Mr. Means became connected with the school at the period of its No. 5.—[Vol. II, No. 1.]—4.

enlargement, and was intimately familiar with the plans and motives of its generous benefactors. Mr. Butler was long a Trustee after he resigned the Principalship, and was always a near resident to the academy till his death. He was, for these reasons, in a situation to be conversant with every event worthy of notice. We shall attempt to do but little more than to express briefly in our own words the facts gathered from these abundant and perfectly reliable sources.

It seems to have been well understood at the time when the founding of academies, was a part of the state policy of education, that no enterprise of the kind in any place, should receive the sanction of the Legislature by an act of incorporation, much less a state endowment, unless the inhabitants of such a locality, should first provide buildings suitable for the proposed seminary. When a sum sufficient to provide the requisite buildings was raised, then a charter was granted; and if the prospects of the infant seminary were encouraging, the patronage of the state was in due time bestowed.

The inhabitants of Groton raised by subscription the sum of three hundred and twenty-five pounds, for the erection of an academy structure. In aid of this project, a few shares were subscribed in Pepperell, an ancient precinct or parish of Groton.

With this sum, hardly \$1,100, the academy was built in 1793, and opened for school purposes in 1794. In order to aid this enterprise, the town of Groton voted that the town Treasurer should give his note for two hundred pounds, the interest of which should be annually paid, with the understanding that the principal should never be called for.* This was a limited income on which to rest the foundations of an important institution of learning; and yet Harvard and Yale sprang into being from beginnings even less inconsiderable.

The charter was granted in 1793, but it was not till four years had passed away, that the aid of the state was received in the grant of a half township of Maine land. This township consisted of eleven thousand five hundred and twenty acres, and sold for fifty cents an acre. The price of tuition previous to 1795, was one shilling a week. It was raised in that year to twenty cents a week, and in 1810 to twenty five cents, at which rate it continued till a recent period.

Though the academy had no other endowment at first, except the meagre appropriation of \$40 per annum from the town treasury, yet the determination was from the outset, to have a school of a high grade. It was the wise policy of the state not to entrust the entire management of the affairs of academies to the towns where they were located; not so much because the finances of such schools

* The town voted to withhold the appropriation after a few years.

would not be well managed, as because the danger was great, lest the local standard of education would be too low.

For this reason, undoubtedly, the charter required that a majority of the board of trust should be non-residents, and this too, at a time, when there were a large number of distinguished men, residents of Groton, most of which were deeply interested in the welfare of the rising seminary. This policy was the general policy of the state, at that time, and tended to place the academies as well as the colleges largely under the Trusteeship of the clergy, who had great influence over the people in all matters pertaining to education. They served as agents in securing patronage, for the school of which they were Trustees, and they were the best qualified to direct in regard to the best courses of instruction to be adopted in the new grade of schools founded by the Commonwealth. The history of every New England College and academy will verify the remark once made by President Day, of Yale, that "if ministers do not take care of the best interests of our higher seminaries of learning, then they will not be cared for."

If funds are wanting when the foundations of a new college or academy are laid, still the institution will thrive for a time, if it has a rich endowment in the high character of its earliest guardians and instructors. The abundant success which crowned the efforts of Trustees and teachers during the first twenty years of its history, is *a priori* evidence that able men guided the counsels and administration of Groton Academy during that period. This conclusion is confirmed at once, by a brief notice of the most distinguished of the clergymen and civilians, who served as Trustees prior to the beginning of the present century.

The following is a list of Trustees for that period, the first fifteen of which were the original corporators named in the charter :

Acc.			Exit.
1793	Hon. Oliver Prescott,	Groton,	1804
"	Rev. Daniel Chaplin, D. D.	"	1817
"	Rev. Labdiel Adams,	Lunenburg,	1801
"	Rev. Phineas Whitney,	Shirley,	1819
"	Rev. John Bullard,	Pepperell,	1821
"	Rev. William Emerson,	Harvard,	1801
"	Hon. Josiah Stearns,	Lunenburg	1811
"	Col. Henry Bloomfield,	Harvard,	1811
"	Hon. James Winthrop,	Cambridge,	1796
"	Col. Henry Woods,	Pepperell,	1804
"	Maj. Joseph Moors,	Groton,	1794

1793	Doct. Oliver Prescott, Jr.,	Groton,	1813
"	Hon. Samuel [†] Dana,	"	1796
"	Hon. Timothy Bigelow,	"	1813
"	Aaron Brown, Esq.	"	1793
"	Thomas Gardner, Esq.	"	1793
1794	Samuel Lawrence, Esq.	"	1827
"	Hon. James Prescott,	Westford,	1794
1795	James Brazer, Esq.	Groton,	1818
1796	John Brazer, Esq.	Boston,	1796
"	Rev. Nathaniel Thayer, D. D.	Lancaster,	1803
1799	Joshua Longley, Esq.	Shirley,	1814

Hon. Oliver Prescott, and his son, both of which appear in the above list among the original members of the corporation, belonged to a family which has been illustrious in New England, both in the annals of heroism and literature. They were both liberally educated, both were physicians of great eminence and practice, and both were called to fill responsible official stations in the service of the state. Dr. Prescott, the elder, was a general officer in the war of the Revolution.

Rev. Dr. Chaplin, was the pastor of the first parish in Groton for nearly half a century. He was reputed to be an excellent scholar, and was one of the leading divines of his day. Rev. Dr. Thayer, of Lancaster, was distinguished for his great personal excellence and influence among the people of his charge, through a long ministerial career.

Judge Dana, and Hon. Timothy Bigelow, were among the most distinguished lawyers of their day. The former was Chief Justice of the court of Common Pleas,—frequently a member of the Senate of Massachusetts, and three years President of that body. He was a Representative in Congress for one term. Mr. Bigelow was a frequent member of both branches of the State Legislature, and was for eleven years speaker of the House of Representatives.

Deacon Samuel Lawrence was a most estimable and useful citizen, and a constant friend to the seminary which was destined to bear his own name, through the benefactions of his sons, who imitated his example of earnest devotion to its interests according to his ability.

James Brazer, Esq., was a citizen of Groton, of great social influence. He was a man of wealth, according to the standard of his own times, and from his estate in accordance with his wishes, the first considerable benefaction to the academy was made in the legacy of his widow.

The following is a list of those who have held the office of Principal, with the dates of their appointment, and the places of their birth and graduation :

1794	Henry Moor, Londonderry, N. H.	Dartmouth.
1796	Rev. Timothy Williams, Woodstock, Ct.	Yale.
1797	Hon. Asahel Stearns, Lunenburg,	Harvard.
1798	Leonard Mellen, Esq., Cambridge,	Harvard.
1799	Hon. William M. Richardson, Pelham, N. H.	Harvard.
1802	Caleb Butler, Esq., " "	Dartmouth.
1810	Rev. Isaac Jones, Hopkinton,	Williams.
1811	Rev. Samuel Woodbury, Acworth, N. H.	Dartmouth.
1812	Caleb Butler, Esq., Pelham, N. H.	Dartmouth.
1815	Rev. Abel Conant, Milford, N. H.	Dartmouth.
1819	Ephraim Sherman, Esq., Sudbury,	Harvard.
1821	Rev. Eber Child, Thetford, Vt.	Dartmouth.
1823	Rev. David O. Allen, Princeton,	Amherst.
1824	Asa F. Lawrence, Esq., Groton,	Harvard.
1826	Elizur Wright, Esq., Hudson, Ohio,	Yale.
1828	Rev. George Beecher, Litchfield, Ct.	Yale.
1830	James Towner, Willsborough, N. Y.	Univ. Vt.
1836	Rev. Horace Herrick, Peacham, Vt.	Dartmouth.
1840	Rev. Ezekiel H. Barstow, Kingston, N. H.	Dartmouth.
1844	Rev. Moses H. Wells, Deerfield, N. H.	Dartmouth.
1845	Rev. James Means, Amherst, N. H.	Bowdoin.
1851	Rev. Mathew D. Gordon, <i>pro tem.</i> Scotland.	Middlebury.
1852	Rev. Wm. C. Dickinson, <i>pro tem.</i> L. Meadow.	Amherst.
1852	Rev. Charles Hammond, Union, Ct.	Yale.

The first Preceptor, Henry Moor, was employed two years, and was regarded as a good teacher. He died soon after his resignation. His salary was \$400 per annum. Until the accession of Mr. Means in 1845, all the incumbents of the office of Head Master were elected soon after graduation, and before they studied a profession.

With the exception of Mr. Butler, Mr. Towner, and Mr. Means, the term of service has never exceeded five years. Mr. Stearns, the third Preceptor, became distinguished as a lawyer in his practice at Chelmsford. He was Representative in Congress one term, and for twelve years Professor of Law in Harvard University.

Mr. Richardson became a lawyer of distinction in Groton, and was a Representative in Congress from 1811 to 1814. In 1816 he was appointed Chief Justice of the Superior Court of New Hampshire. He died in 1838, at Chester, N. H.

Mr. Allen, Preceptor in 1823, afterwards studied Divinity at Andover

and served as a missionary at Bombay twenty-six years. He received the degree of D. D., from Amherst College in 1853.

James Towner, Preceptor from 1830 to 1835, studied Divinity, and was licenced to preach, but was never ordained. He was regarded as an accomplished instructor. He died in Michigan City, Ind., March 2d, 1844.

There have been many excellent instructors among the great number employed, during the long period since the establishment of the academy, but we must limit our notices to two administrations, one among the earliest, the other recent in the history of the academy.

Caleb Butler is a name which always will be conspicuous in the history of Lawrence Academy, and of the town of Groton. He was chosen Principal in 1802, and succeeded his friend and fellow townsman, Mr. Richardson, who had served successfully a term of three years.

Mr. Butler soon became known as one of the best instructors of that period, and his school enjoyed a long season of uninterrupted prosperity. He was graduated at Dartmouth in 1800, with the first honors of his class, and ever after enjoyed the special confidence and regard of President Wheelock, of that Institution.

Few institutions have furnished more graduates, distinguished in every honorable calling and profession, than Groton Academy, during the first twenty five years of its history, and most of these were pupils of Mr. Butler. Among the college graduates of this period, we find the names of Hon. HENRY A. BULLARD, Hon. JOSEPH G. KENDALL, Hon. ISAAC FLETCHER who were members of the House of Representatives in the Congress of the United States; of Hon. ETHER SHEPLEY, Senator of the United States from Maine, and afterwards Chief Justice of the same state; of Hon. AMOS KENDALL, of the city of Washington; of Hon. JOEL PARKER, Chief Justice of the state of New Hampshire, and now Professor of Law in Harvard University; of Rev. CALEB J. TENNEY, D. D., of Newport, Rhode Island, and afterwards of Wethersfield Conn., who was the valedictorian of the class of 1801, at Dartmouth, of which Daniel Webster was a member; of Rev. JAMES WALKER, D. D., President of Harvard University; of Hon. LUTHER LAWRENCE, of Lowell,—and Hon. JOHN P. BIGELOW, of Boston; of Rev. ANDREW BIGELOW, D. D., of Boston,—Rev. GEORGE G. INGERSOLL, D. D., Rev. J. D. FARNSWORTH,—Rev. RUFUS NUTTING, Professor in Western Reserve College, and Rev. WINTHROP BAILEY, tutor of Bowdoin College. During the same period, a large number of pupils were fitted for mercantile and other professions, some of whom have become hardly less distinguished than those who

entered college. Of these we can only mention the names of the five brothers of the Lawrence family. LUTHER,—was a graduate of Harvard, and a lawyer by profession for many years, but who afterwards turned his attention to manufacturing in the city of Lowell. ABBOTT,—was the founder of the Lawrence Scientific school at Cambridge, and Minister of the United States at the Court of St. James. AMOS and WILLIAM,—were the munificent benefactors of the academy which now bears their name, and of many other Literary Institutions—SAMUEL, a merchant in Boston—alone survives. A large number of ladies were educated at this period, several of whom in their station have become hardly less eminent than those of the other sex already noticed.

After his long and honorable career as an instructor, Mr. Butler spent the remainder of his life in the practice of his profession as a lawyer, and in various civic offices and employments. He was always interested in literary and scientific pursuits. During the last year of his life he read through the entire works of Horace, with all the Latin notes and Excursus of the Delphini edition—using constantly and critically, the standard edition of Doering, as a reference. The year previous he read Virgil entire, in the same thorough manner. He had not read Horace since his college days, more than half a century previous. In May, 1854, a few months previous to his death, he calculated the great eclipse of the sun, of that year, and made most careful preparations to observe that event. In July following, occurred the Jubilee Festival of Lawrence, in which he took the deepest interest, and in whose presence and address delivered on that occasion, the greatest interest was felt by all present. The old graduates were present in great numbers, to welcome their venerable instructor. The generation with whom he then was living, had never known him as a teacher, but only as a useful citizen, as the Historian of the town of Groton, and as the faithful legal adviser of the widow and the orphan, whose interests were often entrusted to his hands. But on that Jubilee festival, the great and honored of the land, came from distant places to visit the scenes of their early youth, and pay a tribute of respect to their early instructor.

So great had been the changes of the town in the lapse of fifty years, that one of the Alumni said there was nothing remaining but "Mount Wachusett in the distance, and Caleb Butler on the spot." Mr. Butler gave a most interesting speech at the dinner table, in which he presented in a striking manner, the "contrasts of the 'old times' and the new." At the close, he addressed a few valedictory words to his own pupils, who all rose up before him, to receive his

last benediction. Among them were the Hon. Abbott Lawrence, Hon. Amos Kendall, Rev. President Walker, Hon. Joel Parker, Hon. Mr. Bigelow, Rev. Dr. Bigelow, Mr. Samuel Lawrence, and very many others. "It was a touching sight," said Mr. Means, in his account of the festival, "to behold those persons, some of them so greatly distinguished, taking this respectful attitude before the gray-haired teacher of their early years."

A few days later Mr. Butler was permitted with his partner to celebrate their "Golden Wedding." In the month of September his fatal sickness was induced by an accidental fall from one of the fruit trees of his garden. In the early part of his sickness, before the apprehension of its fatal termination had been felt, he remarked that the lot of Horace, was his own, in being nearly killed by a similar accident, and quoted the imprecations of the poet in the third book of the Odes, against the tree which had so nearly taken the life of its owner. He died Oct. 7th, 1854, aged 79.

The funeral of Mr. Butler took place on one of the most beautiful days of autumn. A sermon on the occasion was preached by Rev. Crawford Nightingale, pastor of the first parish, which was published on the day of the Bi-centennial celebration of the town of Groton, Oct. 31st, 1855.

The accession of the Rev. James Means, to the office of Principal, in 1845, marks the beginning of a new financial era in the history of the institution. No teacher ever entered upon a new sphere of labor under more powerful stimulants to faithful effort than Mr. Means, and the success of a long and prosperous administration fully justified the selection of the Trustees in his appointment.

Mr. Means was a native of Amherst, N. H., a graduate of Bowdoin college, and of Andover seminary, and had been a settled pastor five years, at Concord, Massachusetts. For the first time in the history of the school, there was united in the office of the Preceptorship, the functions of an authorized minister of the gospel. It is well known that Dr. Arnold, of Rugby, deemed it of the utmost importance that the head master of a great public school, should for the sake of moral and religious considerations always be a preacher, and so deeply did he prize the advantage which the sacred office gave him as a moral teacher, that when the post of chaplain became vacant, he sought for the place, and through all his subsequent career fulfilled its daily duties, as well as the duties of preacher on the Sabbath, without compensation. The famous Rugby Chapel Sermons were the result in part, of his labors as a Christian teacher.

The connection of Mr. Means with the academy, continued till

August, 1852, and was then terminated by the resignation of his substitute, Mr. Gordon, on account of ill health, while he was himself in Europe, on leave of absence—"and too far away for any extension of his arrangements with the Trustees."

About the time Mr. Means was appointed Principal, commenced that period which he in his Jubilee address so fitly termed the "period of reward" and which succeeded as a "third stage" that long period of economy, which began with Mr. Richardson's administration, and had always continued, until the Lawrence benefactions relieved the institution from further embarrassment.

This period, as we have seen, was not unproductive of good, as the reward of faithful service on the part of the teachers and Trustees. The few thousands of capital given as a state endowment, were well invested. The first age when there were no proper endowments, Mr. Means aptly designated as "the period of faith."

Mr. Means was a near relative by marriage of Mr. Amos Lawrence, and he was made fully acquainted with, and entered heartily into all the plans of renovation and enlargement which had been formed by Mr. Lawrence in relation to the academy. The school buildings were greatly enlarged, the number of teachers was increased, the course of studies was extended, and a large library collected which now numbers over four thousand volumes.

When the first generation of Trustees and teachers had passed, the relative condition of Groton academy, both as to finances and literary rank were not equal to that of the first fifteen or twenty years of the present century. Though the funds were never ample, nor the course of studies extensive, or the amount of instruction great as compared with a first class academy of the present day, yet in the period just referred to, not so much was demanded of such an institution as was required twenty-five years later in consequence of the new impulse then given to the entire system of college education throughout the land, and especially in New England.

Andover, Exeter, the Boston Latin School, and a few other institutions, by reason of ample endowments, were able to keep pace with the onward progress of education. In the meantime the policy of the Commonwealth became entirely changed in respect to academies and colleges.

The patronage so liberally given at the beginning of the century, was withdrawn, and the common school system with its gradations alone received the sympathy of the state, while the theory gradually gained ground among the people, and was frequently advocated in the legislature, that the interests of the local schools sustained by

public tax, and the interests of the higher seminaries established and endowed for the general wants of the community, were in their nature diverse, and in their operations and results antagonistical to each other. Such a theory was disastrous to the welfare of schools of every grade, inasmuch as having a common end in view to subserve the public good, if any class in the entire system of instruction suffers, all the other departments of instruction must also suffer.

It is most evident that the continued operations of those causes of decline here indicated, would ultimately have reduced Groton academy to the present condition of very many of the ancient academies of Massachusetts, which once enjoyed the fostering care of the state, and were supported by the public patronage and sympathy, but which are now little more than local schools, having the same possible ends to accomplish as are embraced in the functions of what is called the high school, in the graded system of local public instruction.

The Lawrence benefactions were received most opportunely to interrupt the farther tendency to localization, and to restore to the institution once more the character of an ancient New England academy, by rendering it possible in the possession of ample funds that the demands of the public at large should be met in relation to a seminary established for universal, and not merely local purposes. Thus a great public want is supplied in adding one more seminary to that grade of schools intermediate between the public local schools and the colleges or universities. With the last class of institutions, a first class academy is in a state of close affiliation and inter-dependence, having a constitution and system of administration almost exactly similar.

To the abundant details in the historical sketches of Mr. Butler and Mr. Means, we must refer our readers for the particular benefactions which have been lavished on this highly favored institution.

We have already referred to the state endowment made in 1797, in the form of a grant of a half town-ship of Maine land. The fund arising from the sale of this land, amounted in 1825, to \$7,420. That year a legacy was received from Hannah Brazer, the widow of James Brazer, Esq., which subsequently added to the funds of the academy nearly \$3000.

The first donation of Amos Lawrence was made in 1838, and consisted of valuable books and philosophical apparatus. "From this time forward," says Mr. Means, "the gratitude of the board of Trustees, was not allowed to have rest. At first they were met by resolutions of thanks, but during my connection with the school, they became so incessant, that it was impossible to report them. Besides

the repairs of buildings the gift of apparatus and books, the deed of the Brazer estate (amounting with repairs to \$5,600,) the establishment of twelve scholarships at Bowdoin, Williams and Wabash colleges for students from this academy, it was my custom, at his request, to report to him the case of indigent students, whose wants he promptly supplied, and whenever I wished urgently for money to pay some teacher, he supplied it. A rough estimate which I made of his benefactions to this academy shows that he expended from twenty-two to twenty-five thousand dollars. And yet not a cent appeared in the productive capital of the Trustees. This was charity without ostentation. His brother William gave more than Amos, and more of that which he gave remains to this day in a productive form. Of more than forty-five thousand dollars provided for the academy by Mr. William Lawrence, forty thousand will remain in the hands of the Trustees for purposes of instruction, i. e., while out of all that was given by Mr. Amos Lawrence not one cent was designed to be or now remains among the cash funds of the academy."

In this connection Mr. Means quoted from the then unpublished correspondence of Mr. Amos Lawrence, the following most interesting extracts, which go to show the noble motives which influenced Mr. Amos Lawrence in the gifts he made to the school.

Of the library he says in one of his letters:

"I trust it will be second to no other in the country except Cambridge, and that the place will become a favorite resort of students of all ages, before another fifty years have passed away."

This library was entirely the gift of Mr. Lawrence, and the books were mostly selected by his own hand.

When he presented a cabinet of medals he wrote as follows:

"I present them to the Institution in the name of my grandsons, Francis William, and Arthur Lawrence, in the hope and expectation of implanting among their early objects of regard, this school, so dear to us brothers of the old race, and which was more dear to our honored father, who labored with his hands, and gave from his scanty means, in the beginning, much more in proportion than we are required to do, if we place it at the head of this class of institutions, by furnishing all it can want."

The principal benefactor of this academy, was Mr. William Lawrence. From the extract already quoted from Mr. Means' Jubilee Address, it appears that he gave, in the form of permanent funds, a sum which will amount to \$45,000, when the limit of accumulation has been reached.

Besides this large fund, he gave in 1846, the sum of \$5000, for

general purposes. With this sum, the Trustees were enabled to enlarge the academy buildings, to embellish the grounds, and to enclose the entire plot with a very substantial fence, the front side of which was constructed of iron, after a very beautiful pattern. From the avails of this gift, a suitable bell was also purchased for the Institution.

It is not necessary to enlarge respecting the benefactions of Mr. William Lawrence, since a tribute to his character and memory is paid in the present number of this Journal.

In relation to Mr. Amos Lawrence, the "Life and Correspondence," recently published by his son, William R. Lawrence, M. D., will furnish the most abundant illustrations of all that adorned the character of that most excellent lover of his race. Other literary institutions besides the academy of his native town, shared largely in the gifts lavished by his hand.

It is most earnestly desired that the illustrious example of William and Amos Lawrence may be imitated by men of wealth, in the endowment of academies and other higher seminaries of learning in our land.

Such endowments are ever-flowing streams of good to mankind. As memorials, they are more precious than monuments erected to honor great warriors and statesmen. The grateful scholars of New England, shall in every coming age, repeat the names of PHILLIPS, WILLISTON, and LAWRENCE, with "perpetual benedictions."

IV. MILTON ON EDUCATION.

To make this Journal the repository of the History and Literature of the great subject to which it is exclusively devoted, we shall enrich our pages from time to time with some of the most valuable contributions which have been made in past years by eminent scholars and educators, either in independent treatises, or occasional suggestions, for the improvement of systems, institutions or methods of education. With this view, and because of its large scope and generous spirit, and not because its details are of immediate use, we republish the *TRACTATE* of John Milton, the most resplendent name for genius and culture, in prose and poetry, in English literature, on the reforming of education, which he deemed "one of the greatest and noblest designs that can be thought on"—"the only genuine source of political and individual liberty, the only true safeguard of states, the bulwark of their prosperity and renown." The design of this essay—first published amid the revolutionary upbreak of English society, in the year 1644—was not to unfold a scheme of general education, necessarily limited and superficial in its course of study, but to map out the vast domain of literature and science, which pupils of ample leisure and fortune, and of the highest industry, and emulative ardor, with teachers of the best learning and genius, could successfully traverse and master. Its aim was far beyond anything attained at that day by the university scholars of England, and its details anticipates reforms in the direction of practical science, which after the lapse of two hundred years, are now likely to be generally introduced into the educational schemes of that country. Its diligent perusal can not but inflame any ingenuous mind "with a love of study and the admiration of virtue," and its precepts faithfully followed, can not but fit men "to perform justly, skillfully, and magnanimously all the offices, both private and public, of peace and war." We can not more appropriately introduce this essay than by an account of Milton's education, principally in his own vigorous and eloquent prose.

John Milton was born in London on the 9th of December, 1608. His father was a man of education and property, and gave his son every facility for acquiring a consummate education. To his mother's excellence of character and deeds of charity, Milton bears willing

testimony in his *second* eloquent defence of the people of England. His early training was partly under a private tutor, named Thomas Young, a man of learning and piety, who inspired his pupil with respect and affection; and partly in one of the public schools of London, that of St. Paul's, then presided over by Alexander Gill. On the 12th of February he entered a pensioner, [not dependent on the foundation for support, but paid for his board and tuition] of Christ's College, in the University at Cambridge, being sixteen years and two months old. After a residence of seven years, devoted to literature and the arts, as then taught, he left in the year 1632, having taken in regular course, the two degrees of bachelor and master of arts.*

On quitting the university, Milton took up his abode with his father, who had purchased a property in the village of Horton, in Buckinghamshire, devoting himself to the most thorough and comprehensive course of reading—"beholding the bright countenance of Truth in the quiet and still air of delightful studies," and embodying his observations of nature and his pure and beautiful imaginings into the immortal verse of *L'Allegro* and *Il Penseroso*, of *Lycidas* and *Comus*; and above all, moulding and consolidating his own character and life into "a true poem; that is, a composition and pattern of the best and honorablest things."

Of this period of his life, in his apology, Milton says,—“My morning haunts are, where they should be, at home, not sleeping, or concocting the surfeits of an irregular feast, but up and stirring; in winter, often ere the sound of any bell awake men to labor, or to devotion; in summer, as oft with the bird that first rouses, or not much tardier; to read good authors, or cause them to be read, till the attention be weary, or memory have it full fraught; then with useful and generous labors, preserving the body's health and hardiness, to render lightsome, clear, and not lumpish obedience to the mind, to religion, and our country's liberty, when it shall require firm hearts in sound bodies to stand and cover their stations.” Milton made no pretension to a life without “some recreating intermission of labor and serious things,”—but sought in cheerful conversation, and with the harmonies

* To one of his opponents, who asserted that he had been “vomited out of the University after having spent there a riotous youth, he replied in his “Apology for Smectymnus;”—“It hath given me an apt occasion to acknowledge publicly, with all grateful mind the more than ordinary favor and respect which I found, above any of my equals, at the hands of those courteous and learned men, the Fellows of the College, wherein I spent some years, who at my parting, after I had taken two degrees, as the manner is signified, many ways, how much better it would content them if I could stay, as by many letters full of kindness and loving respect, both before that time, and long after, I was assured of their singular good affection toward me.”

of music heard or performed, and in lofty fable and romance, to retouch his spirit to fresh issues, and prepare himself for harder tasks.

"Next—for hear me out now, readers, that I may tell whither my younger feet wandered,—I betook me among those lofty fables and romances which recount in solemn cantos the deeds of knighthood founded by our victorious kings, and from hence had in renown over all Christendom. There I read, in the oath of every knight, that he should defend to the expense of his best blood, or even of his life, if it so befall him, the honor and chastity of virgin or matron; from whence even then I learned what a noble virtue chastity sure must be, to the defence of which so many worthies, by such dear adventure of themselves had sworn. Also this my mind gave me, that every free and gentle spirit, without that oath, ought to be born a knight, nor needed to expect the gilt spur, or the laying a sword upon his shoulder to stir him up, both by his counsel and his arms, to secure and protect the weakness of attempted chastity;" and then those books, read in hours of recreation, "proved to him so many incitements to the love and observation of virtue." But his strong protection against the seductions of vice was not in the laureat fraternity of poets, or the shady spaces of philosophy, but his early home religious culture. "Last of all,—not in time, but as perfection is last, that care was always had of me, with my earliest capacity, not to be negligently trained in the precepts of the Christian religion."

But his education was not yet complete. On the death of his mother, he visited the continent, and especially Italy, "the seat of civilization, and the hospitable domicil of every species of erudition." In a tour of fifteen months, he made the personal acquaintance of several men of genius, "whose names the world will not willingly let die;" among them, Grotius, and Galileo; and was everywhere received by men of learning, on a footing of equality, which only great conversational powers and sound scholarship could sustain. Of this portion of his life, we fortunately have a brief record from his own pen in reply to some utterly unfounded charges of his unscrupulous assailants, both as to his motives for travel, and his manner of life while abroad.

"On my departure, the celebrated Henry Wooston, who had long been king James' ambassador at Venice, gave me a signal proof of his regard, in an elegant letter which he wrote, breathing not only the warmest friendship, but containing some maxims of conduct which I found very useful in my travels. The noble Thomas Scudamore, king Charles' ambassador, to whom I carried letters of recom-

mendation, received me most courteously at Paris. His lordship gave me a card of introduction to the learned Hugo Grotius, at that time ambassador from the Queen of Sweden to the French court: whose acquaintance I anxiously desired, and to whose house I was accompanied by some of his lordship's friends. A few days after, when I set out for Italy, he gave me letters to the English merchants on my route, that they might show me any civilities in their power.

Taking ship at Nice, I arrived at Genoa, and afterwards visited Leghorn, Pisa, and Florence. In the latter city, which I have always more particularly esteemed for the elegance of its dialect, its genius and its taste, I stopped about two months, when I contracted an intimacy with many persons of rank and learning, and was a constant attendant at their literary parties; a practice which prevails there, and tends so much to the diffusion of knowledge and the preservation of friendship.

No time will ever abolish the agreeable recollections which I cherish of Jacob Gaddi, Carolo Dati, Cultellero, Bonomotthai, Clementillo, Francisco, and many others.

From Florence I went to Siena, thence to Rome, where, after I had spent about two months in viewing the antiquities of that renowned city, where I experienced the most friendly attentions from Lucas Holstein, and other learned and ingenious men, I continued my route to Naples. There I was introduced by a certain recluse, with whom I had traveled from Rome, to John Baptista Manso, Marquis of Villa, a nobleman of distinguished rank and authority, to whom Torquato Tasso, the illustrious poet, inscribed his book on friendship.

During my stay he gave me singular proofs of his regard; he himself conducted me around the city, and to the palace of the viceroy: and more than once paid me a visit at my lodgings. On my departure he gravely apologized for not having shown me more civility, which he said he had been restrained from doing, because I had spoken with so little reserve on matters of religion. When I was preparing to pass over into Sicily and Greece, the melancholy intelligence which I received of the civil commotions in England, made me alter my purpose, for I thought it base to be traveling for amusement abroad, while my fellow citizens were fighting for liberty at home. While I was on my way back to Rome, some merchants informed me that the English Jesuits had formed a plot against me, if I returned to Rome, because I had spoken too freely on religion; for it was a rule which I laid down to myself in those places, never to first begin any conversation on religion; but if any questions were put to me concerning my faith, to declare it without reserve or fear. I never-

theless, returned to Rome. I took no steps to conceal either my person or my character; and for about the space of two months I again openly defended, as I had done before, the reformed religion, in the very metropolis of popery. By the favor of God, I got safe back to Florence, where I was received with as much affection as if I had returned to my native country. There I stopped as many months as I had done before, except that I made an excursion for a few days to Lucca; and, crossing the Apennines, passed through Bologna and Ferrara to Venice. After I had spent a month surveying the curiosities of this city, and had put on board the ship the books which I had collected in Italy, I proceeded through Verona and Milan and along the Lemman lake to Geneva.

The mention of this city brings to my recollection the slandering More, and makes me again call the Deity to witness, that in all those places in which vice meets with so little discouragement, and is practiced with so little shame, I never once deviated from the path of integrity and virtue, and perpetually reflected that, though my conduct might escape the notice of men, it could not elude the inspection of God. At Geneva I held daily conferences with John Deodati, the learned professor of Theology. Then pursuing my former route through France, I returned to my native country, after an absence of one year and about three months: at the time when Charles having broken the peace, was renewing what is called the Episcopal war with the Scots, in which the royalists being routed in the first encounter, and the English being universally and justly disaffected, the necessity of his affairs at last obliged him to convene a parliament. As soon as I was able I hired a spacious house in the city for myself and my books; where I again with rapture renewed my literary pursuits, and where I calmly awaited the issue of the contest, which I trusted to the wise conduct of Providence, and to the courage of the people."

Thus equipped by genius, "the inspired gift of God rarely vouchsafed, but yet to some in every nation," by learning at once elegant and profound, and by travel, under the most favorable opportunities of studying works of art, and of intercourse with refined society, and with aspirations of the most honorable achievements for the good of his race, and the glory of God, Milton did not feel it below his position or his hopes to become a teacher, to compose school-books, and to employ his great abilities in pointing out "the right path of a virtuous and noble education,—laborious indeed at the first ascent, but else so smooth, so green, so full of goodly prospect, and melodious sounds on every side, that the harp of Orpheus was not more charming."

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What he might have accomplished in his own school, if he had converted it into an "ACADEMY," such as he described in his Tractate, which was to be "at once both school and university for a complete and generous education," except in mere professional training; had he devoted himself unreservedly, for any considerable time, to this work, with text-books of his own composing,* and with pupils† capable of receiving his instruction with the same acuteness of wit and apprehension, the same industry and thirst after knowledge as the instructor was imbued with," is now only left to conjecture. Apart from the direct fruit of his teaching, in giving to his country a succession of well-trained youth, a portion, at least, imbued with his own ingenuous and noble ardor, "inflamed with the love of learning and the admiration of virtue, and stirred up with high hopes of living to be brave men and worthy patriots, dear to God, and famous to all ages,"—his example would indirectly have elevated the office of educator of the young in public estimation, and demonstrated the wisdom of securing for it the best talent and highest culture of the community. But the times called for such talents and scholarship as he possessed, in other walks less retired and peaceful; and, "when God commands to take the trumpet and blow a dolorous or a jarring blast, it lies not in man's will what he shall say, or what he shall conceal." And, he did take the trumpet, and, in defence of the people of England, and of their right to institute a republican government, and of the liberty of the press, and of conscience in matters of religion, against prelates, priests, and kings, and their hirelings, he blew a blast, again and again, "of which all Europe rang, from side to side." And, although it was his lot to fall on "evil times and evil tongues,"—to see "the good old cause" of the commonwealth shipwrecked, and every species of licentiousness roll in like a flood over the land which he would gladly have made to smile with the triumphs of temperance, frugality, knowledge, and liberty, yet, not bating one jot of heart or hope, in his blindness and disappointment, he addressed himself to the achievement of his great poem, the *PARADISE LOST*.

Dr. Johnson, in his *Life of Milton*, with that spirit of depreciation which breathes throughout his notice of Milton's opinions, character and life, and which was prompted by his hatred of the great poet's religious and political sentiments, makes the following remarks on the educational labors of our author.

"Let not our veneration for Milton forbid us to look with some degree

* Milton was the author of a Latin Grammar, a Treatise on Logic, and a Latin Lexicon.

† This is the language of one of his pupils, who adds that such teaching, with the right sort of youth, would have produced "prodigies of wit [mind] and learning."

of merriment on great promises and small performance, on the man who hastens home, because his countrymen are contending for their liberty, and, when he reaches the scene of action, vapors away his patriotism in a private boarding-school. This is the period of his life from which all his biographers seem inclined to shrink. They are unwilling that Milton should be degraded to a school-master; but, since it cannot be denied that he taught boys, one finds out that he taught for nothing, and another that his motive was only zeal for the propagation of learning and virtue; and, all tell what they do not know to be true, only to excuse an act which no wise man will consider as, in itself, disgraceful. His father was alive; his allowance was not ample, and he supplied its deficiencies by an honest and useful employment.

It is told that, in the art of education, he performed wonders; and, a formidable list is given of the authors, Greek and Latin, that were read in Aldergate street by youth between ten and fifteen or sixteen years of age. Those who tell or receive these stories should consider that nobody can be taught faster than he can learn. The speed of the horseman must be limited by the power of the horse. Every man that has ever undertaken to instruct others can tell what slow advances he has been able to make, and how much patience it requires to recall vagrant inattention, to stimulate sluggish indifference, and to rectify absurd misapprehension.

The purpose of Milton, as it seems, was to teach something more solid than the common literature of schools, by reading those authors that treat of physical subjects: such as the Georgick, and astronomical treatises of the ancients. This was a scheme of improvement which seems to have busied many literary projectors of that age. Cowley, who had more means than Milton of knowing what was wanting to the embellishments of life, formed the same plan of education in his imaginary college.

But, the truth is, that the knowledge of external nature, and the sciences which that knowledge requires or includes, are not the great or the frequent business of the human mind. Whether we provide for action or conversation, whether we wish to be useful or pleasing, the first requisite is the religious and moral knowledge of right and wrong; the next is an acquaintance with the history of mankind, and with those examples which may be said to embody truth, and prove by events the reasonableness of opinions. Prudence and Justice are virtues and excellencies of all times and of all places; we are perpetually moralists, but we are geometricians only by chance. Our intercourse with intellectual nature is necessary; our speculations upon

matter are voluntary, and at leisure. Physiological learning is of such rare emergency that one may know another half his life, without being able to estimate his skill in hydrostatics or astronomy; but, his moral and prudential character immediately appears.

Those authors, therefore, are to be read at schools that supply most axioms of prudence, most principles of moral truth, and most materials for conversation; and, these purposes are best served by poets, orators, and historians.

Let me not be censured for this digression, as pedantic or paradoxical; for, if I have Milton against me, I have Socrates on my side. It was his labor to turn philosophy from the study of nature to speculations upon life; but, the innovators whom I oppose are turning off attention from life to nature. They seem to think that we are placed here to watch the growth of plants, or the motions of the stars. Socrates was rather of opinion that what we had to learn was, how to do good, and avoid evil.

Ὅτι τοι ἐν μεγαροῖσι κακόν' ἀγάθους ἐστραταί.

Of institutions, we may judge by their effects. From this wonder-working academy, I do not know that there ever proceeded any man very eminent for knowledge: its only genuine product, I believe, is a small history of poetry, written in Latin, by his nephew, Philips, of which, perhaps, none of my readers has ever heard.*

That in his school, as in every thing else which he undertook, he labored with great diligence, there is no reason for doubting. One part of his method deserves general imitation. He was careful to instruct his scholars in religion. Every Sunday was spent upon theology; of which he dictated a short system, gathered from the writers that were then fashionable in the Dutch universities.

He set his pupils an example of hard study and spare diet; only now and then he allowed himself to pass a day of festivity and indulgence with some gay gentlemen of Gray's Inn."

To these disparaging remarks we add a few sensible comments, by Rev. John Mitford, in his elegantly written life, prefixed to Pickering's Aldine edition of Milton's Poetical Works.

"The system of education which he adopted was deep and comprehensive; it promised to teach science with language, or rather, to make the study of languages subservient to the acquisition of scientific knowledge. Dr. Johnson has severely censured this method of instruction, but with arguments that might not unsuccessfully be met.

* We may be sure, at least, that Dr. Johnson had never seen the book he speaks of; for it is entirely composed in English, though its title begins with two Latin words, "*Theatrum Poetarum*;" or, a complete Collection of the Poets, &c.," a circumstance that probably misled the biographer of Milton.

The plan recommended by the authority of Milton seems to be chiefly liable to objection, from being too extensive; and, while it makes authors of all ages contribute to the development of science, it, of course, must reject that careful selection, which can alone secure the cultivation of the taste. We may also reply to Johnson that, although all men are not designed to be astronomers, or geometricians, a knowledge of the principles on which the sciences are built, and the reasonings by which they are conducted, not only forms the most exact discipline which the mind can undergo, giving to it comprehension and vigor; but, is the only solid basis on which an investigation of the laws of nature can be conducted, or those arts improved that tend to the advantage of society, and the happiness of mankind.

Johnson says, we are not placed here to watch the planets, or the motion of the stars, but to do good. But, good is done in various ways, according to opportunities offered, and abilities conferred; a man whose natural disposition, or the circumstances of whose education lead to pursue astronomical discoveries, or the sublime speculations of geometry, is emphatically doing good to others, as he is extending the boundaries of knowledge, and to himself, as he is directing the energies of his mind to subjects of the most exalted contemplation."

Having, in the foregoing extract from Dr. Johnson, introduced an ungenerous fling of that great but prejudiced writer against the patriotism of JOHN MILTON, because, in the absence of any other opportunity of being equally useful to the cause in which his heart was enlisted, and until he was summoned by the parliament of England and its great Protector, "to address the whole collective body of people, cities, states, and councils of the wise and eminent, through the wide expanse of anxious and listening Europe," he saw fit to employ his great abilities in illustrating, by pen and example, the true principles and method of a generous and thorough education, "the only genuine source of political and individual liberty,—the only true safeguard of states," and to defend the cause of civil and religious freedom by his publications,—we will let the great champion of the commonwealth of England speak for himself, and refresh the patriotism of our own times by a few of his burning words, uttered over two hundred years ago in his "*Defensio Secunda pro Populo Anglicano*."

"But against this dark array of long received opinions, superstitions, obloquy, and fears, which some dread even more than the enemy himself, the English had to contend; and all this under the light of better information, and favored by an impulse from above, they overcame with such singular enthusiasm and bravery, that, great as were the numbers engaged in the contest, the grandeur of conception and loftiness of spirit which were universally displayed, merited for each individual more than a mediocrity of fame; and Britain, which was formerly styled

the hot bed of tyranny, will hereafter deserve to be celebrated for endless ages, as a soil most genial to the growth of liberty. During the mighty struggle, no anarchy, no licentiousness was seen; no illusions of glory, no extravagant emulation of the ancients inflamed them with a thirst for ideal liberty; but the rectitude of their lives, and the sobriety of their habits, taught them the only true and safe road to real liberty, and they took up arms only to defend the sanctity of the laws and the rights of conscience.

Relying on the divine assistance, they used every honorable exertion to break the yoke of slavery; of the praise of which, though I claim no share to myself, yet I can easily repel any charge which may be adduced against me, either of want of courage or want of zeal. For though I did not participate in the toils or dangers of the war, yet I was at the same time engaged in a service not less hazardous to myself, and more beneficial to my fellow citizens, nor, in the adverse turns of our affairs, did I ever betray any symptoms of pusillanimity and dejection, or show myself more afraid than became me of malice or of death; for since from my youth I was devoted to the pursuits of literature, and my mind had always been stronger than my body, I did not court the labors of a camp, in which any common person would have been of more service than myself, but resorted to that employment in which my exertions were likely to be of most avail. Thus, with the better part of my frame I contributed as much as possible to the good of my country, and to the success of the glorious cause in which we were engaged; and I thought if God willed the success of such glorious achievements, it was equally agreeable to his will that there should be others by whom those achievements should be recorded with dignity and elegance; and that the truth which had been defended by arms, should also be defended by reason, which is the best and only legitimate means of defending it. Hence, while I applaud those who were victorious in the field, I will not complain of the province which was assigned me, but rather congratulate myself upon it and thank the Author of all good for having placed me in a station which may be an object of envy to others rather than of regret to myself.

I am far from wishing to make any vain or arrogant comparisons, or to speak ostentatiously of myself; but, in a cause so great and glorious, and particularly on an occasion when I am called by the general suffrage to defend the very defenders of that cause, I can hardly refrain from assuming a more lofty and swelling tone than the simplicity of an exordium may seem to justify: and as much as I may be surpassed in the powers of eloquence and copiousness of diction, by the illustrious orators of antiquity, yet the subject of which I treat was never surpassed in any age, in dignity or in interest. It has excited such general and such ardent expectation, that I imagine myself not in the forum or on the rostra, surrounded only by the people of Athens or of Rome, but about to address in this as in my former defence, the whole collective body of people, cities, states, and councils of the wise and eminent, through the wide expanse of anxious and listening Europe. I seem to survey, as from a towering height, the far extended tracts of sea and land, and innumerable crowds of spectators, betraying in their looks the liveliest, and sensations the most congenial with my own. Here I behold the stout and manly prowess of the German, disdainful servitude; there the generous and lively impetuosity of the French; on this side, the calm and stately valor of the Spaniard; on that, the composed and wary magnanimity of the Italian. Of all the lovers of liberty and virtue, the magnanimous and the wise, in whatever quarter they may be found, some secretly favor, others openly approve; some greet me with congratulation and applause; others who had long been proof against conviction, at last yield themselves captive to the force of truth. Surrounded by congregated multitudes, I now imagine that, from the columns of Hercules to the Indian Ocean, I behold the nations of the earth recovering that liberty which they so long had lost; and that the people of this island are transporting to other countries a plant of more beneficial qualities, and more noble growth than that which Triptolemus is reported to have carried from region to region; that they are disseminating the blessings of civilization and freedom among cities, kingdoms, and nations."

In further notice of the charges against himself, and especially that his loss of sight was a judgment for using his eyes in writing against

the divine rights of kings, and in defence of the people of England for dethroning and beheading their monarch, he thus speaks :

"Respecting my blindness ; * * * I must submit to my affliction. It is not so wretched to be blind, as it is not to be capable of enduring blindness. But why should I not endure a misfortune which it behooves every one to be prepared to endure, if it should happen ; which may, in the common course of things, happen to any man ; and which has been known to happen to the most distinguished and virtuous persons in history. Shall I mention those wise and ancient bards, whose misfortunes the gods are said to have compensated by superior endowments, and whom men so much revered that they chose rather to impute their want of sight to the injustice of heaven than to their own want of innocence or virtue ? [After citing the virtues of Tiresias, Timoleon, Appius Claudius, Metellus, the incomparable Doge Dandolo, and the patriarch Isaac—] Did not our Saviour himself clearly declare that that poor man whom he restored to sight had not been born blind, either on account of his own sins, or of the sins of his progenitors ? and with respect to myself, though I have accurately examined my conduct, and scrutinized my soul, I call thee, O God, the searcher of hearts, to witness, that I am not conscious, either in the more early, or in the later periods of my life, of having committed any enormity which might deservedly have marked me out as a fit object for such calamitous visitation. But since my enemies boast that this affliction is only a retribution for the transgressions of my pen, I again invoke the Almighty to witness, that I never, at any time, wrote any thing which I did not think agreeable to truth, to justice and to piety. This was my persuasion then, and I feel the same persuasion now. Nor was I prompted to such exertions by the influence of ambition, by the lust of lucre or of praise ; it was only the conviction of duty and the feeling of patriotism, a disinterested passion for the extension of civil and religious liberty.

Thus, therefore, when I was publicly solicited to write a reply to the defence of the royal cause, when I had to contend with the pressure of sickness, and with the apprehension of soon losing the sight of my remaining eye, and when my medical attendants clearly announced that if I did engage in the work, it would be irreparably lost, their premonitions caused no hesitation and inspired no dismay. My resolution was unshaken, though the alternative was the loss of my sight, or the desertion of duty. Let, then, the calumniators of the divine goodness cease to revile, or to make me the object of their superstitious imaginations. Let them consider that my situation, such as it is, is neither the object of my shame or of my regret ; that I am not depressed by any sense of the divine displeasure, and that in the solace and the strength which have been infused into me from above, I have been able to do the will of God ; that I oftener think on what he hath bestowed than on what he hath withheld, and that in my consciousness of rectitude I feel a treasured store of tranquility and delight.

But if the choice were necessary, I would prefer my blindness to that of my adversaries ;—theirs is a cloud spread over the mind which darkens both the light of reason and conscience ;—mine keeps from my view only the colored surfaces of things, while it leaves me at liberty to contemplate the beauty and stability of virtue and truth. There is, as the apostle has remarked, a way to strength through weakness. Let me be the most feeble creature alive, as long as my feebleness seems to invigorate the energies of my rational and immortal spirit ; as long as in that obscurity in which I am enveloped, the light of the divine presence more clearly shines,—then, in proportion as I am weak, I shall be invincibly strong ; and in proportion as I am blind, I shall more clearly see. O, that I may be perfected by feebleness and irradiated by obscurity ! And indeed, in my blindness I enjoy, in no inconsiderable degree, the favor of the Deity, who regards me with more tenderness as I am able to behold nothing but himself ! Alas for him who insults me, who maligns and merits public execration ! For the divine law not only shields me from injury, but almost renders me too sacred to attack ; not, indeed, so much from the privation of sight, as from the overshadowing of those heavenly wings which seem to have occasioned this obscurity, and which, when occasioned, he is wont to illuminate with an interior light more precious and more pure. To this I ascribe the more tender assiduities of my friends, their soothing attentions, their kind visits, their reverential observances. Nor do persons of prin-

cipal distinction suffer me to be bereaved of comfort, when they see me bereaved of sight amid the exertions which I made, the zeal which I showed, and the dangers which I run for the liberty which I love. They do not strip me of the badge of honor which I have once worn; they do not deprive me of the places of public trust to which I have been appointed, nor do they abridge my salary or emoluments. Thus, while both God and man unite in solacing me under the height of my affliction, let no one lament my loss of sight in so honorable a cause!"

After paying an eloquent tribute of gratitude and praise to Cromwell, Bradshaw, Fleetwood, Lambert, Desborough, Overton, Whitlocke, Lawrence, and others who distinguished themselves and served their country by their exertions in the senate and in the field, Milton closes with advice worthy to be held in everlasting remembrance with the Farewell Address of George Washington.

"To these men, whose talents are so splendid, and whose worth has been so thoroughly tried, you would, without doubt, do right to trust the protection of our liberties; nor would it be easy to say to whom they might more safely be entrusted. Then, if you leave the church to its own government, and relieve yourself and the other public functionaries from a charge so onerous, and so incompatible with your functions; and will no longer suffer two powers, so different as the civil and the ecclesiastical, to commit fornication together, and by their mutual and delusive aids in appearance to strengthen, but in reality to weaken, and finally to subvert each other; if you shall remove all power of persecution out of the church, (but, persecution will never cease, so long as men are bribed to preach the gospel by a mercenary salary, which is forcibly extorted, rather than gratuitously bestowed, which serves only to poison religion and to strangle truth,) you will then effectually have cast those money-changers out of the temple, who do not merely truckle with doves but with the Dove itself, with the Spirit of the Most High. Then, since there are often in a republic men who have the same itch for making a multiplicity of laws, as some poetasters have for making many verses, and, since laws are usually worse in proportion as they are more numerous, if you shall not enact so many new laws as you abolish old, which do not operate so much as warnings against evil, as impediments in the way of good; and, if you shall retain only those which are necessary, which do not confound the distinctions of good and evil, which, while they prevent the frauds of the wicked, do not prohibit the innocent freedoms of the good, which punish crimes, without interdicting those things which are lawful only on account of the abuses to which they may occasionally be exposed. For, the intention of laws is to check the commission of vice; but, liberty is the best school of virtue, and affords the strongest encouragements to the practice. Then, if you make a better provision for the education of our youth than has hitherto been made, if you prevent the promiscuous instruction of the docile and the indocile, of the idle and the diligent, at the public cost, but reserve the rewards of learning for the learned, and of merit for the meritorious. If you permit the free discussion of truth, without any hazard to the author, or any subjection to the caprice of an individual, which is the best way to make truth flourish and knowledge abound, the censure of the half-learned, the envy, the pusillanimity, or the prejudice which measures the discoveries of others, and, in short, every degree of wisdom, by the measure of its own capacity, will be prevented from doling out information to us according to their own arbitrary choice. Lastly, if you shall not dread to hear any truth, or any falsehood, whatever it may be, but if you shall least of all listen to those who think that they can never be free till the liberties of others depend on their caprice, and who attempt nothing with so much zeal and vehemence as to fetter, not only the bodies but the minds of men, who labor to introduce into the state the worst of all tyrannies, the tyranny of their own depraved habits and pernicious opinions; you will always be dear to those who think not merely that their own sect or faction, but that all citizens, of all descriptions, should enjoy equal rights and equal laws. If there be any one who thinks that this is not liberty enough, he appears to me to be rather inflamed with the lust of ambition or of anarchy than with the love of a genuine and well-regulated liberty; and particularly, since the circumstances of

the country, which has been so convulsed by the storms of faction, which are yet hardly still, do not permit us to adopt a more perfect or desirable form of government.

For, it is of no little consequence, O citizens, by what principles you are governed, either in acquiring liberty, or in retaining it when acquired. And, unless that liberty, which is of such a kind as arms can neither procure nor take away, which alone is the fruit of piety, of justice, of temperance, and unadulterated virtue, shall have taken deep root in your minds and hearts, there will not long be wanting one who will snatch from you by treachery what you have acquired by arms. War has made many great whom peace makes small. If, after being released from the toils of war, you neglect the arts of peace, if your peace and your liberty be a state of warfare, if war be your only virtue, the summit of your praise, you will, believe me, soon find peace the most adverse to your interests. Your peace will be only a more distressing war; and, that which you imagined liberty, will prove the worst of slavery. Unless, by the means of piety, not frothy and loquacious, but operative, unadulterated, and sincere, you clear the horizon of the mind from those mists of superstition which arise from the ignorance of true religion, you will always have those who will bend your necks to the yoke, as if you were brutes, who, notwithstanding all your triumphs, will put you up to the highest bidder, as if you were mere booty made in war; and, will find an exuberant source of wealth in your ignorance and superstition. Unless you will subjugate the propensity to avarice, to ambition, and sensuality, and expel all luxury from yourselves and from your families, you will find that you have cherished a more stubborn and intractable despot at home than you ever encountered in the field; and, even your very bowels will be continually teeming with an intolerable progeny of tyrants. Let these be the first enemies whom you subdue; this constitutes the campaign of peace; these are triumphs, difficult, indeed, but bloodless; and far more honorable than those trophies which are purchased only by slaughter and by rapine. Unless you are victors in this service, it is in vain that you have been victorious over the despotic enemy in the field. For, if you think that it is a more grand, a more beneficial, or a more wise policy, to invent subtle expedients for increasing the revenue, to multiply our naval and military force, to rival in craft the ambassadors of foreign states, to form skillful treaties and alliances, than to administer unpolluted justice to the people, to redress the injured, and to succor the distressed, and speedily to restore to every one his own, you are involved in a cloud of error; and, too late, will you perceive, when the illusion of those mighty benefits has vanished, that, in neglecting these, which you now think inferior considerations, you have only been precipitating your own ruin and despair. The fidelity of enemies and allies is frail and perishing, unless it be cemented by the principles of justice; that wealth and those honors, which most covet, readily change masters; they forsake the idle, and repair where virtue, where industry, where patience flourish most. Thus nation precipitates the downfall of nation; thus, the more sound part of one people subverts the more corrupt, thus you obtained the ascendant over the royalists. If you plunge into the same depravity, if you imitate their excesses, and hanker after the same vanities, you will become royalists as well as they, and liable to be subdued by the same enemies, or by others in your turn; who, placing their reliance on the same religious principles, the same patience, the same integrity and discretion which made you strong, will deservedly triumph over you who are immersed in debauchery, in the luxury and the sloth of kings. Then, as if God was weary of protecting you, you will be seen to have passed through the fire, that you might perish in the smoke; the contempt which you will then experience will be great as the admiration which you now enjoy; and, what may in future profit others, but can not benefit yourselves, you will leave a salutary proof what great things the solid reality of virtue and of piety might have effected, when the mere counterfeit and varnished resemblance could attempt such mighty achievements, and make such considerable advances towards the execution. For, if either, through your want of knowledge, your want of constancy, or your want of virtue, attempts so noble, and notions so glorious, have had an issue so unfortunate, it does not, therefore, follow, that better men should be either less daring in their projects or less sanguine in their hopes. But, from such an abyss of corruption into which you so readily fall, no one, not even Cromwell himself, nor a whole nation of Brutuses, if they were alive, could deliver you if they would, or would deliver you if they could. For,

who would vindicate your right of unrestrained suffrage, or of choosing what representatives you liked best, merely that you might elect the creatures of your own faction, whoever they might be, or him, however small might be his worth, who would give you the most lavish feasts, and enable you to drink to the greatest excess? Thus, not wisdom and authority, but turbulence and gluttony, would soon exalt the vilest miscreants from our taverns and our brothels, from our towns and villages, to the rank and dignity of senators. For, should the management of the republic be entrusted to persons to whom no one would willingly entrust the management of his private concerns; and the treasury of the state be left to the care of those who had lavished their own fortunes in an infamous prodigality? Should they have the charge of the public purse, which they would soon convert into a private, by their unprincipled peculations? Are they fit to be the legislators of a whole people who themselves know not what law, what reason, what right and wrong, what crooked and straight, what licit and illicit means? who think that all power consists in outrage, all dignity in the parade of insolence? who neglect every other consideration for the corrupt gratification of their friendships, or the prosecution of their resentments? who disperse their own relations and creatures through the provinces, for the sake of levying taxes and confiscating goods; men, for the greater part, the most profligate and vile, who buy up for themselves what they pretend to expose to sale, who thence collect an exorbitant mass of wealth, which they fraudulently divert from the public service; who thus spread their pillage through the country, and, in a moment emerge from penury and rags to a state of splendor and of wealth? Who could endure such thievish servants, such viceregers of their lords? Who could believe that the masters and the patrons of a banditti could be the proper guardians of liberty? or, who, would suppose, that he should ever be made one hair more free by such a set of public functionaries, (though they might amount to five hundred elected in this manner from the counties and boroughs,) when among them who are the very guardians of liberty, and to whose custody it is committed, there must be so many who know not either how to use or to enjoy liberty, who neither understand the principles nor merit the possession? But, what is worthy of remark, those who are the most unworthy of liberty are wont to behave most ungratefully toward their deliverers. Among such persons, who would be willing either to fight for liberty, or to encounter the least peril in its defence? It is not agreeable to the nature of things that such persons ever should be free. However much they may brawl about liberty, they are slaves, both at home and abroad, but without perceiving it; and, when they do perceive it, like unruly horses that are impatient of the bit, they will endeavor to throw off the yoke, not from the love of genuine liberty, (which a good man only loves, and knows how to obtain,) but from the impulses of pride and little passions. But, though they often attempt it by arms, they will make no advances to the execution; they may change their masters, but will never be able to get rid of their servitude. This often happened to the ancient Romans, wasted by excess, and enervated by luxury: and, it has still more so been the fate of the moderns; when, after a long interval of years, they aspired, under the auspices of Crescentius, Nomentanus, and, afterwards, of Nicolas Rentius, who had assumed the title of Tribune of the People, to restore the splendor and reëstablish the government of ancient Rome. For, instead of fretting with vexation, or thinking that you can lay the blame on any one but yourselves, know that to be free is the same thing as to be pious, to be wise, to be temperate and just, to be frugal and abstinent, and, lastly, to be magnanimous and brave; so, to be the opposite of all these is the same as to be a slave; and, it usually happens, by the appointment and, as it were, retributive justice of the Deity, that that people which cannot govern themselves, and moderate their passions, but crouch under the slavery of their lusts, should be delivered up to the sway of those whom they abhor, and made to submit to an involuntary servitude. It is also sanctioned by the dictates of justice and by the constitution of nature, that he who, from the imbecility or derangement of his intellect, is incapable of governing himself, should, like a minor, be committed to the government of another; and, least of all, should he be appointed to superintend the affairs of others or the interest of the state.

You, therefore, who wish to remain free, either instantly be wise, or, as soon as possible, cease to be fools; if you think slavery an intolerable evil, learn obedience to reason and the government of yourselves; and, finally, bid adieu to your

disensions, your jealousies, your superstitions, your outrages, your rapine, and your lusts. Unless you will spare no pains to effect this, you must be judged unfit both by God and mankind, to be entrusted with the possession of liberty and the administration of the government; but, will rather, like a nation in a state of pupillage, want some active and courageous guardian to undertake the management of your affairs. With respect to myself, whatever turn things may take, I thought that my exertions on the present occasion would be serviceable to my country; and, as they have been cheerfully bestowed, I hope that they have not been bestowed in vain. And, I have not circumscribed my defence of liberty within any petty circle around me, but have made it so general and comprehensive, that the justice and the reasonableness of such uncommon occurrences, explained and defended, both among my countrymen and among foreigners, and which all good men can not but approve, may serve to exalt the glory of my country, and to excite the imitation of posterity. If the conclusion do not answer to the beginning, that is their concern; I have delivered my testimony, I would almost say, have erected a monument that will not readily be destroyed, to the reality of those singular and mighty achievements which were above all praise. As the epic poet, who adheres at all to the rules of that species of composition, does not profess to describe the whole life of the hero whom he celebrates, but only some particular action of his life, as the resentment of Achilles at Troy, the return of Ulysses, or the coming of Æneas into Italy; so it will be sufficient, either for my justification or apology, that I have heroically celebrated at least one exploit of my countrymen; I pass by the rest, for who could recite the achievements of a whole people? If, after such a display of courage and of vigor, you basely relinquish the path of virtue, if you do anything unworthy of yourselves, posterity will sit in judgment on your conduct. They will see that the foundations were well laid; that the beginning (nay, it was more than a beginning) was glorious; but, with deep emotions of concern, will they regret, that those were wanting who might have completed the structure. They will lament that perseverance was not conjoined with such exertions and such virtues. They will see that there was a rich harvest of glory, and an opportunity afforded for the greatest achievements, but that men only were wanting for the execution; while they were not wanting, who could rightly counsel, exhort, inspire, and bind an unfading wreath of praise round the brows of the illustrious actors in so glorious a scene."

After reading these noble sentiments, we feel, with Wadsworth, that not only England, but our country, and the WORLD hath need of just such men at this crisis of affairs.

Milton! thou should'st be living at this hour:
The world hath need of thee.

* * * * * We are selfish men:
Oh! raise us up, return to us again;
And give us manners, virtue, freedom, power.
Thy soul was like a star, and dwelt apart:
Thou hadst a voice whose sound was like the sea:
Pure as the naked heavens, majestic, free.
So didst thou travel on life's common way,
In cheerful godliness; and yet, thy heart
The lowliest duties on herself did lay.

We pass now to Milton's Tractate on Education, to which we have prepared brief Notes, referred to [1-72] in the text, which will be published in a subsequent article.

TRACTATE ON EDUCATION

A LETTER TO MASTER SAMUEL HARTLIB.¹

BY JOHN MILTON.

HARTLIB :—I am long since persuaded, that to say and do memory and imitation, no purpose or respect should us than simply the love of God and of mankind. Never write now the reforming of education, though it be one of the best and noblest designs that can be thought on, and for the sake of this nation perishes, I had not yet at this time been moved by your earnest entreaties and serious conjurements ; as I am now half diverted for the present in the pursuance of some other ends, the knowledge and the use of which, can not but be of great advantage to the enlargement of truth and honest living, and more peace. Nor should the laws of any private society have prevailed with me to divide thus, or transpose my duties ; but that I see those aims, those actions which have procured me the esteem of a person sent hither by some good man from a far country to be the occasion and incitement of the reformation of this island. And as I hear you have obtained the same approbation of men of most approved wisdom and some of the highest among us, not to mention the learned correspondence which you have carried on with foreign parts, and the extraordinary pains and diligence you have used in this matter both here and beyond the seas, I am persuaded of the definite will of God so ruling, or the peculiar sway of his providence also is God's working. Neither can I think, that so highly so valued as you are, you would, to the forfeit of your own ability, impose upon me an unfit and over-ponderous task, but that the satisfaction which you profess to have received from those incidental discourses which we have wandered into, has almost constrained you into a persuasion, that what I have said to you from me in this point, I neither ought nor can in conscience to retract beyond this time both of so much need at once, and so much opportunity to try what God hath determined. I will not dispute, whatever it is, either of divine or human obligation, but will upon me ; but will forthwith set down in writing, as I have done, that voluntary idea, which hath long in silence presented to me, of a better education, in extent and comprehension large, and yet of time far shorter and of attainment far

more certain, than hath been yet in practice. Brief² I shall endeavor to be; for that which I have to say, assuredly this nation hath extreme need should be done sooner than spoken. To tell you, therefore, what I have benefited herein among old renowned authors I shall spare; and to search what many modern *Januas*³ and *Didactics*, more than ever I shall read, have projected, my inclination leads me not. But if you can accept of these few observations which have flowered off, and are, as it were, the burnishing of many studious and contemplative years altogether spent in the search of religious and civil knowledge, and such as pleased you so well in the relating, I here give you them to dispose of.

The end then of learning is, to repair the ruins of our first parents by regaining to know God aright, and out of that knowledge to love him, to imitate him, to be like him, as we may the nearest by possessing our souls of true virtue, which being united to the heavenly grace of faith, makes up the highest perfection. But because our understanding cannot in this body found itself but on sensible things, nor arrive so clearly to the knowledge of God and things invisible, as by orderly coning over the visible and inferior creature, the same method is necessarily to be followed in all discreet teaching.⁴ And seeing every nation affords not experience and tradition enough for all kind of learning, therefore we are chiefly taught the languages of those people who have at any time been most industrious after wisdom; so that language is but the instrument conveying to us things useful to be known. And though a linguist should pride himself to have all the tongues that Babel cleft the world into,⁵ yet if he have not studied the solid things in them, as well as the words and lexicons, he were nothing so much to be esteemed a learned man, as any yeoman or tradesman competently wise in his mother-dialect only. Hence appear the many mistakes which have made learning generally so unpleasing and so unsuccessful. First, we do amiss to spend seven or eight years merely in scraping together so much miserable Latin and Greek as might be learned otherwise easily and delightfully in one year.⁶ And that which casts our proficiency therein so much behind, is our time lost partly in too oft idle vacancies given both to schools and universities; partly in a preposterous exaction, forcing the empty wits of children to compose themes, verses and orations, which are the acts of ripest judgment, and the final work of a head filled by long reading and observing with elegant maxims and copious invention.⁷ These are not matters to be wrung from poor stripplings, like blood out of the nose, or the plucking of untimely fruit; besides all the ill habit which they get of wretched barbarizing

against the Latin and Greek idiom, with their untutored Anglicisms, odious to be read, yet not to be avoided without a well-continued and judicious conversing among pure authors, digested, which they scarce taste.⁸ Whereas, if after some preparatory grounds of speech by their certain forms got into memory, they were led to the praxis hereof in some chosen short book lessoned thoroughly to them, they might then forthwith proceed to learn the substance of good things and arts in due order, which would bring the whole language quickly into their power. This I take to be the most rational and most profitable way of learning languages, and whereby we may best hope to give account to God of our youth spent herein. And for the usual method of teaching arts, I deem it to be an old error of universities,⁹ not yet well recovered from the scholastic grossness of barbarous ages, that instead of beginning with arts most easy, (and those be such as are most obvious to the sense,) they present their young, unmatriculated novices, at first coming with the most intellectual abstractions of logic and metaphysics; so that they having but newly left those grammatic flats and shallows, where they stuck unreasonably to learn a few words with lamentable construction, and now on the sudden transported under another climate, to be tossed and turmoiled with their unballasted wits in fathomless and unquiet deeps of controversy, do for the most part grow into hatred and contempt of learning, mocked and deluded all this while with ragged notions and babblements, while they expected worthy and delightful knowledge; till poverty or youthful years call them importunately their several ways, and hasten them,¹⁰ with the sway of friends, either to an ambitious and mercenary, or ignorantly zealous divinity: some allured to the trade of law,¹¹ grounding their purposes not on the prudent and heavenly contemplation of justice and equity,¹² which was never taught them, but on the promising and pleasing thoughts of litigious terms, fat contentions, and flowing fees: others betake them to state affairs with souls so unprincipled in virtue and true generous breeding, that flattery, and court-shifts, and tyrannous aphorisms, appear to them the highest points of wisdom;¹³ instilling their barren hearts with a conscientious slavery, if, as I rather think, it be not feigned: others, lastly, of a more delicious and airy spirit, retire themselves, knowing no better, to the enjoyments of ease and luxury,¹⁴ living out their days in feast and jollity, which indeed is the wisest and safest course of all these, unless they were with more integrity undertaken. And these are the errors, and these are the fruits of mis-spending our prime youth at the schools and universities, as we do, either in learning mere words, or such things chiefly as were better unlearned.

I shall detain you no longer in the demonstration of what we should not do, but straight conduct you to a hillside, where I will point you out the right path of a virtuous and noble education; laborious indeed at the first ascent, but else so smooth, so green, so full of goodly prospect and melodious sounds on every side, that the harp of Orpheus was not more charming.¹⁵ I doubt not but ye shall have more ado to drive our dullest and laziest youth, our stocks and stubs, from the infinite desire of such a happy nurture, than we have now to haul and drag our choicest and hopefulest wits to that asinine feast of sow-thistles and brambles which is commonly set before them as all the food and entertainment of their tenderest and most docible age.⁹ I call, therefore, a complete and generous education, that which fits a man to perform justly, skilfully, and magnanimously, all the offices both private and public, of peace and war.¹⁶ And how all this may be done between twelve and one-and-twenty, less time than is now bestowed in pure trifling at grammar and sophistry, is to be thus ordered.

First, to find out a spacious house and ground about it fit for an ACADEMY,¹⁷ and big enough to lodge one hundred and fifty persons, whereof twenty or thereabout may be attendants, all under the government of one who shall be thought of desert sufficient, and ability either to do all, or wisely to direct and oversee it done. This place should be at once both school and university,¹⁸ not needing a remove to any other house of scholarship, except it be some peculiar college of law or physic where they mean to be practitioners; but as for those general studies which take up all our time from *Lilly*¹⁹ to the commencing,²⁰ as they term it, master of art, it should be absolute. After this pattern as many edifices may be converted to this use as shall be needful in every city²¹ throughout this land, which would tend much to the increase of learning and civility everywhere. This number, less or more, thus collected, to the convenience of a foot-company or interchangeably two troops of cavalry, should divide their day's work into three parts as it lies orderly,—their studies, their exercise, and their diet.

I. For their studies: first, they should begin with the chief and necessary rules of some good grammar, either that now used or any better;²² and while this is doing, their speech is to be fashioned to a distinct and clear pronunciation,²³ as near as may be to the Italian, especially in the vowels. For we Englishmen being far northerly, do not open our mouths in the cold air wide enough to grace a southern tongue, but are observed by all other nations to speak exceeding close and inward; so that to smatter Latin with an English mouth, is as ill a

hearing as law French. Next, to make them expert in the usefulest points of grammar, and withal to season them and win them early to the love of virtue and true labor, ere any flattering seducement or vain principle seize them wandering, some easy and delightful book²⁴ of education should be read to them, whereof the Greeks have store, as *Cebes*, *Plutarch*, and other Socratic discourses; ²⁵ but in Latin we have none of classic authority extant, except the two or three first books of Quintilian, ²⁶ and some select pieces elsewhere. But here the main skill and groundwork will be, to temper them such lectures and explanations, upon every opportunity, as may lead and draw them in willing obedience, inflamed with the study of learning and the admiration of virtue, stirred up with high hopes of living to be brave men and worthy patriots, dear to God and famous to all ages. That they may despise and scorn all their childish and ill-taught qualities, to delight in manly and liberal exercises; which he who hath the art and proper eloquence to catch them with, what with mild and effectual persuasions, and what with the intimation of some fear, if need be, but chiefly by his own example, might in a short space gain them to an incredible diligence and courage, infusing into their young breasts such an ingenuous and noble ardor as would not fail to make many of them renowned and matchless men. At the same time, some other hour of the day, might be taught them the rules of arithmetic, and, soon after, the elements of geometry, even playing, as the old manner was. After evening repast, till bed-time, their thoughts would be best taken up in the easy grounds of religion, and the story of scripture.²⁷ The next step would be to the authors of agriculture, *Cato*, *Varro*, and *Columella*, for the matter is most easy; and if the language be difficult, so much the better; it is not a difficulty above their years. And here will be an occasion of inciting and enabling them hereafter to improve the tillage of their country, to recover the bad soil, and to remedy the waste that is made of good; for this was one of Hercules' praises.²⁸ Ere half these authors be read, (which will soon be with plying hard and daily,) they can not choose but be masters of any ordinary prose: so that it will be then seasonable for them to learn in any modern author the use of the globes and all the maps, first with the old names, and then with the new;²⁹ or they might then be capable to read any compendious method of natural philosophy. And at the same time might be entering into the Greek tongue, after the same manner as was before prescribed for the Latin; whereby the difficulties of grammar being soon overcome, all the historical physiology³⁰ of *Aristotle* and *Theophrastus*, are open before them, and as I may say, under contribution.

The like access will be to Vitruvius, to Seneca's Natural Questions, to Mela, Celsus, Pliny, or Solinus.³¹ And having thus past the principles of arithmetic, geometry, astronomy, and geography, with a general compact of physics, they may descend in mathematics to the instrumental science of trigonometry, and from thence to fortification, architecture, enginery, or navigation.³² And in natural philosophy they may proceed leisurely from the history of meteors, minerals, plants, and living creatures, as far as anatomy.³³ Then also in course might be read to them out of some not tedious writer the institution of physic; that they may know the tempers, the humors, the seasons and how to manage a crudity; which he who can wisely and timely do is not only a great physician to himself and to his friends, but also may at some time or other save an army by this frugal and expenseless means only, and not let the healthy and stout bodies of young men rot away under him for want of this discipline, which is a great pity, and no less a shame to the commander.³⁴ To set forward all these proceedings in nature and mathematics, what hinders but that they may procure, as oft as shall be needful, the helpful experiences of hunters, fowlers, fishermen, shepherds, gardeners, apothecaries; and in other sciences, architects, engineers, mariners, anatomists, who doubtless would be ready, some for reward, and some to favor such a hopeful seminary.³⁵ And this will give them such a real tincture of natural knowledge as they shall never forget, but daily argument with delight. Then also those poets which are now counted most hard, will be both facile and pleasant, *Orpheus, Hesiod, Theocritus, Aratus, Nicander, Oppian, Dionysius*; and, in Latin, *Lucretius, Manilius*, and the rural part of Virgil.³⁶

By this time years and good general precepts will have furnished them more distinctly with that act of reason which in ethics is called *proairesis*, that they may with some judgment contemplate upon moral good and evil.³⁷ Then will be required a special reinforcement of constant and sound endocrinating, to set them right and firm, instructing them more amply in the knowledge of virtue and hatred of vice; while their young and pliant affections are led through all the moral works of *Plato, Xenophon, Cicero, Plutarch, Laertius*, and those *Locrian* remnants; but still to be reduced in their nightward studies wherewith they close the day's work under the determinate sentence of David or Solomon, or the evangelist and apostolic Scriptures.³⁸ Being perfect in the knowledge of personal duty, they may then begin the study of economics.³⁹ And either now or before this, they may have easily learned at any odd hour the Italian tongue.⁴⁰ And soon after, but with wariness and good antidote, it would be

wholesome enough to let them taste some choice comedies, Greek, Latin or Italian ; those tragedies also that treat of household matters, as *Trachiniæ*, *Alcestis*, and the like.⁴¹ The next remove must be to the study of Politics ;⁴² to know the beginning, end, and reasons of political societies, that they may not, in a dangerous fit of the commonwealth, be such poor shaken uncertain reeds, of such a tottering conscience as many of our great councilors have lately shown themselves, but steadfast pillars of the state. After this they are to dive into the grounds of law and legal justice, delivered first and with the best warrant by Moses, and, as far as human prudence can be trusted, in those extolled remains of Grecian lawgivers, *Lycurgus*, *Solon*, *Zaleucus*, *Charondas* ; and thence to all the Roman edicts and tables, with their Justinian ; and so down to the Saxon and common laws of England, and the statutes.⁴³ Sundays, also, and every evening may now be understandingly spent in the highest matters of theology and church history, ancient and modern : and ere this time at a set hour the Hebrew tongue might have been gained, that the Scriptures may now be read in their own original ; whereto it would be no impossibility to add the Chaldee and the Syrian dialect.⁴⁴ When all these employments are well conquered, then will the choice histories, heroic poems, and attic tragedies of stateliest and most regal argument, with all the famous political orations, offer themselves ; which, if they were not only read, but some of them got by memory, and solemnly pronounced with right accent and grace, as might be taught, would endure them even with the spirit and vigor of Demosthenes or Cicero, Euripides or Sophocles.⁴⁵ And now, lastly, will be the time to read with them those organic arts which enable men at discourse, and write perspicuously, elegantly, and according to the fitted style of lofty, mean or lowly.⁴⁶ Logic, therefore, so much as is useful, is to be referred to this due place, with all her well couched heads and topics, until it be time to open her contracted palm into a graceful and ornate rhetoric taught out of the rule of Plato, Aristotle, Phalereus, Cicero, Hermogenes, Longinus.⁴⁷ To which poetry would be made subsequent, or indeed rather precedent, as being less subtile and fine, but more simple, sensuous and passionate. I mean not here the prosody of a verse, which they could not but have hit on before among the rudiments of grammar, but that sublime art which in Aristotle's Poetics, in Horace, and the Italian commentaries of Castelvetro, Tasso, Mazzoni, and others, teaches what the laws are of a true epic poem, what of a dramatic, what of a lyric, what decorum is, which is the grand master-piece to observe.⁴⁸ This would make them soon perceive what despicable creatures our common rhymers and play-

writers be; and show them what religious, what glorious and magnificent use might be made of poetry, both in divine and human things.⁴⁹ From hence, and not till now, will be the right season of forming them to be able writers and composers in every excellent matter, when they shall be thus fraught with an universal insight into things: or whether they be to speak in parliament or council, honor and attention would be waiting on their lips.⁵⁰ There would then appear in pulpits other visages, other gestures, and stuff otherwise wrought, than we now sit under, oft-times to as great a trial of our patience as any other that they preach to us.⁵¹ These are studies wherein our noble and our gentle youth ought to bestow their time in a disciplinary way from twelve to one-and-twenty, unless they rely more upon their ancestors dead, than upon themselves living.⁵² In which methodical course it is so supposed they must proceed by the steady pace of learning onward, as at convenient times for memory's sake to retire back into the middle ward, and sometimes into the rear of what they have been taught, until they have confirmed and solidly united the whole body of their perfected knowledge, like the last embattling of a Roman legion.⁵³ Now will be worth the seeing what exercises and recreations may best agree and become these studies.

II. The course of study hitherto briefly described is, what I can guess by reading, likest to those ancient and famous schools of Pythagoras, Plato, Isocrates, Aristotle, and such others, out of which were-bred such a number of renowned philosophers, orators, historians, poets, and princes, all over Greece, Italy, and Asia, besides the flourishing studies of Cyrene and Alexandria.⁵⁴ But herein it shall exceed them, and supply a defect as great as that which Plato noted in the commonwealth of Sparta; whereas that city trained up their youth most for war, and these in their academies and Lyceum all for the gown, this institution of breeding which I here delineate, shall be equally good both for peace and war.⁵⁵ Therefore, about an hour and a half ere they eat at noon should be allowed them for exercise, and due rest afterwards; but the time for this may be enlarged at pleasure, according as their rising in the morning shall be early.⁵⁶ The exercise which I commend first is the exact use of their weapon, to guard, and to strike safely with edge or point. This will keep them healthy, nimble, strong, and well in breath; is also the likeliest means to make them grow large and tall, and to inspire them with a gallant and fearless courage, which being tempered with seasonable lectures and precepts to make them of true fortitude and patience, will turn into a native and heroic valor, and make them hate the cowardice of doing wrong.⁵⁷ They must be also practiced in all the locks and

gripes of wrestling, wherein Englishmen are wont to excel, as need may often be in fight to tug, to grapple, and to close.⁵⁸ And this perhaps will be enough wherein to prove and heat their single strength. The interim of unsweating themselves regularly, and convenient rest before meat, may both with profit and delight be taken up in recreating and composing their travailed spirits with the solemn and divine harmonies of music⁵⁹ heard or learned, either whilst the skillful organist plies his grave and fancied descant in lofty fugues,⁶⁰ or the whole symphony with artful and unimaginable touches adorn and grace the well studied chords of some choice composer;⁶¹ sometimes the lute or soft organ-stop waiting on elegant voices either to religious, martial, or civil ditties, which, if wise men and prophets be not extremely out, have a great power over dispositions and manners to smooth and make them gentle from rustic harshness and distempered passions.⁶² The like also would not be inexpedient after meat, to assist and cherish nature in her first concoction, and send their minds back to study in good tune and satisfaction. Where having followed it under vigilant eyes until about two hours before supper, they are, by a sudden alarum or watchword, to be called out to their military motions, under sky or covert according to the season, as was the Roman wont; first on foot, then, as their age permits, on horseback to all the art of cavalry;⁶³ that having in sport, but with much exactness and daily muster, served out the rudiments of their soldiership in all the skill of embattling, marching, encamping, fortifying, besieging, and battering, with all the helps of ancient and modern stratagems, tactics, and warlike maxims, they may, as it were out of a long war, come forth renowned and perfect commanders in the service of their country.⁶⁴ They would not then, if they were trusted with fair and hopeful armies, suffer them for want of just and wise discipline to shed away from about them like sick feathers, though they be never so oft supplied; they would not suffer their empty and unrecrutable colonels of twenty men in a company to quaff out or convey into secret hoards the wages of a delusive list and miserable remnant;⁶⁵ yet in the meanwhile to be overmastered with a score or two of drunkards, the only soldiery left about them, or else to comply with all rapines and violences. No, certainly, if they knew ought of that knowledge which belongs to good men or good governors, they would not suffer these things. But to return to our own institute. Besides these constant exercises at home, there is another opportunity of gaining experience to be won from pleasure itself abroad: in those vernal seasons of the year, when the air is calm and pleasant, it were an injury and sullenness against nature not to go out and see her riches, and partake in

her rejoicing with heaven and earth.⁶⁶ I should not, therefore, be a persuader to them of studying much then, after two or three years that they have well laid their grounds, but to ride out in companies with prudent and staid guides to all the quarters of the land, learning and observing all places of strength, all commodities of building, and of soil for towns and tillage, harbors, and ports for trade.⁶⁷ Sometimes taking sea as far as to our navy, to learn there also what they can in the practical knowledge of sailing and sea-fight. These ways would try all their peculiar gifts of nature, and if there were any secret excellence among them, would fetch it out and give it fair opportunities to advance itself by, which could not but mightily redound to the good of this nation, and bring into fashion again those old admired virtues and excellencies with far more advantage now in this purity of Christian knowledge.⁶⁸ Nor shall we then need the mon-sieurs of Paris to take our hopeful youth into their slight and prodigal custodies, and send them over back again transformed into mimics, apes, and kikshose. But if they desire to see other countries at three or four and twenty years of age, not to learn principles but to enlarge experience and make wise observation, they will by that time be such as shall deserve the regard and honor of all men where they pass, and the society and friendship of those in all places who are best and most eminent.⁶⁹ And perhaps then other nations will be glad to visit us for their breeding, or else to imitate us in their own country.

III. Now, lastly, for their diet there can not be much to say, save only that it would be best in the same house; for much time else would be lost abroad, and many ill habits got; and that it should be plain, healthful, and moderate, I suppose is out of controversy.⁷⁰

Thus, Mr. Hartlib, you have a general view in writing, as your desire was, of that which at several times I had discoursed with you concerning the best and noblest way of education; not beginning, as some have done, from the cradle, which yet might be worth many considerations, if brevity had not been my scope.⁷¹ Many other circumstances also I could have mentioned, but this, to such as have the worth in them to make trial, for light and direction may be enough. Only I believe that this is not a bow for every man to shoot in that counts himself a teacher, but will require sinews almost equal to those which Homer gave Ulysses;⁷² yet I am withal persuaded that it may prove much more easy in the essay than it now seems at distance, and much more illustrious; howbeit not more difficult than I imagine, and that imagination presents me with nothing but very happy, and very possible, according to best wishes, if God have so decreed, and this age have spirit and capacity enough to apprehend.

V. REMARKS ON A NATIONAL UNIVERSITY.*

[THE establishment of a great University—the concentration in some one place, of all the means of the highest culture,—it matters not under what auspices of city, state, or denomination, so be it that its class and lecture-rooms, its cabinets, laboratories and libraries are easily accessible to scholars from every section of the country, in any department of study and research—was presented in various forms at the last Annual session of the American Association for the Advancement of Education. It was introduced by the retiring President, Prof. BACHE, in his Introductory Address. To this address we append a report of the remarks which followed its delivery, as well as those of Prof. PIERCE, of Cambridge, which followed the reading of a Paper on the subject of University Development in Europe, by President TAPPAN, of the University of Michigan.]

THE Discussion of the Topics of Prof. BACHE's Address being in order,

PROF. S. S. HALDIMAN, of Columbia, Penn., remarked:—

I wish to submit a few remarks on some points to which from his own connection with the Coast Survey, the President could not well allude, but which establish strong claims on the mercantile community for substantial aid to such an institution of higher learning as has been so admirably presented. He might have dwelt on the discovery of shoals and rocks along our coast, by which navigation has been rendered more safe, and millions of property saved. He might have alluded to the scientific labors of Maury, Espy, and Redfield, by which storms, and head winds can be avoided, and routes to distant parts shortened. He might have alluded to the practical application of the discoveries in electricity and galvanism, by which the protection of the lightning rod by his own invention, had been thrown around our dwellings, and warehouses, and ships, and instantaneous communications established by telegraph, between counting-rooms, and homes, the most widely separated. He might have alluded to the new routes opened to traffic and travel by the explorations made by the officers of our army, who were educated in the highest school of mathematical science in this country. Surely that portion of our community, which enters so largely into these discoveries and their application, can out of their abundance do much to establish an institution, by which science, in all its departments, will be still further advanced and society in all its relations largely benefited.

* This article should have followed the Remarks of Prof. Bac'

The President alluded to the fragmentary and disconnected character of higher seminaries—the encroachment of one grade of schools on the legitimate field of another—of our High Schools, and Free Academies, on the colleges and universities. This is a growing evil, surely the former ought not to confer dangers which suppose the culture only attainable in the latter.

REV. CHARLES BROOKS, of Medford, Mass., remarked:—

With your permission, Mr. President, I will read a resolution which I had intended to offer at this meeting as an introduction to what I have to say:

Resolved, That it is expedient to inquire whether the colleges of the United States, as a continuation of the common schools, should be supported by the State, as the public school is supported by the town.

It seems to me that this Association composed of members from all the older states, is to exercise a vast power upon the interest of learning, and especially in the new states and the republics of South America. It is from the older republics that these new states are to receive their ideas; from our models they are to shape their literary institutions; and it becomes an important question for us to see what we do in this regard. The question then comes before the reflecting mind, what is the best form to be adopted by a Republic? We begin with this proposition, that every child born into the world has a natural right to the development of his powers, physical, intellectual, and moral, in their natural order, at the proper time, and in due proportion; that every individual shall be when grown up just such a character as God ordained for the infant constitution. I apprehend that a republic is the only place upon earth where this idea can be carried into effect. What then is the duty of a republic with regard to every human being born within its territory? I apprehend it to be this; that every family is bound to take care of its children; that every town—I speak of the township for the sake of convenience of illustration, although well aware that it is politically unknown in many parts of the country—that the town is morally and politically bound to see that every child within its precincts receives an education. Every town ought to have a law to secure the attendance of every child at school, public, or private, and compelling the child to go to some school, whether the parents will or not. The state, I apprehend, is but a continuation of the town, and every state is morally and politically bound to see that every child born within its territory, receives a proper physical, intellectual, and moral culture. What, then, is the next step? That the town shall institute infant schools, or primary schools, and shall say to every child under seven years of age—go to that school, and you will find a good school-house, a good teacher, and proper books, all free; and when you have attended that school until you are seven years of age, you have but to make your bow and thank the town. You may then go to the grammar school, where you will find apparatus, teachers, books, all that is required. The town asks only of your parents to clothe and feed you. And when

you have graduated from the grammar school, go to the high school, and there you will find all the instrumentalities required to carry you forward in the higher departments of learning.

And the natural continuation of this system is the true republican idea of education. Carry out this republican idea, that every child has a right to culture, that every town is bound to see that its children receive education, and it follows that every state is morally and politically bound to develop all the talents that God sends into it; and it is therefore the duty of the State to establish a free college, and thus to carry education still onward, and make each child what God designed that he should be. This, I apprehend, is the true republican idea of education. This is the idea which I wish to see established in all the republics of South America. And after all this comes the noble plan which has been so admirably and eloquently described by our retiring President, a University into which the best scholars from our colleges may go and receive from the country such culture of the peculiar talents which each possesses as shall fit him to answer the purpose for which he was born into the world, that he may fill the spot which God ordained that he should fill, that he may work without friction in his own proper place in the world.

MR. JOHN McMULLEN, of New York, followed with some interesting remarks on the power of sympathy in education, which as they had no special reference to the subject of a National University, are omitted in this place.

PROF. BENJAMIN PIERCE, of Cambridge, Mass., remarked:—

There is one subject spoken of in the address of the retiring President, in which with him I have taken great interest, and with him have suffered disappointment;—it is the establishment of a great University. I can, as he can, speak upon the subject, now at least, with independence. There was a time, when we were engaged in our efforts at Albany, when I should have been willing to embark in such an institution, when against the entreaties and almost the tears of my family and friends, I should have been willing, for the sake of the cause of education in the country to have abandoned existing connections with another place of learning, to join that institution. But since that time I have designedly made such engagements, as will make it impossible now. I am therefore, as free as the President, to speak upon the subject. It seems to me to have a very close and important connection with the subject referred to by Rev. Mr. Brooks; the duty of the government to educate every citizen; its duty, because, if for no other reason, it is good economy upon the part of the State, to educate every one of its citizens to the utmost extent; just as good economy as for the farmer to make the most of every portion of his stock. The state will be benefitted by educating every man to the highest point that he can be; and it will be the best investment it can make of its funds to invest them in intellect developed to its utmost capacity.

It seems to me that a great University in connection with the colleges and high schools, is of the greatest importance, because it gives the

only means of adapting education to every variety of intellect. I begin to think that even in our Common School system, excellent as it is, there is one great defect. As it is administered at present in my own State, Massachusetts, I am sure that there is. It partakes too much of the character of a sort of manufactory, in which masses of educated men are to be turned out as if they were screws or pins. This is no way to educate men. Men have individual characters. Their Deity has made them with speciality, and we can not unmake them. Education must consist in giving men opportunities for development, more than anything else, and it is the duty of the State to afford those opportunities. There are certain men, who will, under any circumstances follow the sea. There are others who will stay at home, and stand behind the counter to sell the goods. You can not help it. They will do it. There are others, the Smithsons, the Lawrences, the Coopers, of our race, who will go into the market and make fortunes for the sake of founding institutions of learning, which shall be a glory to their country. There are the Newtons and the La Places who are nothing if they are not Newtons or La Places. It is no accident that the same intellectual family has given birth to him who subdued the lightning, and to that other, who is now among us, who has subdued even the earthquake to the service of science, and compelled this destructive agency to explore the depths of the ocean and report its measure with unerring precision.

It seems to me that it is important to provide a greater number of teachers, and also to arrange the schools in such a way that the different classes of intellect can properly be brought out, and can be allowed opportunity to develop themselves. I think that the idea of sympathy which has been referred to [by Mr. McMullen,] is a very important one, not merely the sympathy of the pupils among themselves, but sympathy with their teacher. A pupil can learn from his teacher only when he has a sympathy with him. It seems to me that if we look through the world which the Deity has made, we shall see other indications of what we should do in this respect. We certainly should not think it possible for the lark to learn its song from the raven, or for the bird of night to teach wisdom to the cock that crows in the morning; nor would it be possible for the goose to teach the eagle how to fly. So also I am quite sure that minds of a certain order can only be instructed by minds of the same order. The *similia similibus* is a real law of mind, whether it is of medical science or not. I think that it was important for the education of an Agassiz, that he was subject to the inspiration of a Cuvier; that even if some teachers may go far beyond their pupils, so that they can not fully follow them, yet that the enthusiasm of their nature will inspire the pupil to rival their masters, and that this is a very important element in the development of leading minds.

I know it is a popular doctrine that genius will find its own way; but I doubt whether genius will necessarily be developed of itself. We have another popular doctrine which is much nearer to the truth, which is, that opportunity makes the man. We can not have a great man unless

he has great ability, but, neither can we have a great man who has not an opportunity worthy to develope him. It is important, therefore, that in our public provision for education, we should give this opportunity.

There is one other remark I would like to make, in reference to the religious element as brought into the schools. It seems to me that there is too much of a disposition to exclude it from the fear of sectarian influences. Now I can not but think that the sectarianism is a far less evil than the exclusion of religion; and as a father, I would rather have my own child subjected to any sectarian influences, I care not what they are, than have him taught in a school where his Maker is not constantly recognized. It seems to me that the attempt to entirely leave this out of the schools, is about as rational as it would be if we were to take the salt out of all our food during the day, and think we could properly incorporate it into our system by eating it all together in the morning or at night.

[The subject of this Discussion was resumed by Prof. PIERCE, after the reading of a Paper by President TAPPAN, of the University of Michigan, on the "Progress of Educational Development in Europe."]

This learned and profound discussion of the progress of the University seems to be of the greatest importance to the understanding of what the University ought to be, and what ought to be the relations of our colleges to education. I confess that for the first time, have I had a perfectly clear understanding of this whole subject. I have known that our views in many respects were quite erroneous. I was aware that the name of American System, as applied to our colleges, was altogether erroneous. It is in its very basis such a system as would not have originated in a free people from their own action. It has no element of freedom in it. Its rigid restriction to a period of four years; its conferring of degrees without examination, merely as such, merely as honorary titles, are altogether opposed to our system of free education and the free principles of our country. I hope that at some time or other, this subject will be distinctly brought before us by the Standing Committee, that we may examine it from this point of view, as to the expediency of recommending to our colleges to abandon their present system of a limited period for education, and to found a system upon the idea of giving a real education, such an education as men want, such as parents wish their sons to receive, instead of sending them to college to stay a certain time, and then to come out with the name of being educated, but without the reality.

It seems to me of the highest importance, also, that this Association should distinctly recommend that degrees as at present given, should be abandoned wholly and forever, and that either degrees should not be given at all, or in order to have a real, instead of a nominal value, that they shall be given after satisfactory examination, and that they shall be accompanied with forms of expression indicating the value of the examination. The only institution that I have any personal knowledge of, in the country where this has been introduced, is the Lawrence

Scientific School. To a certain extent, I believe the plan has been adopted in the University of Virginia, and perhaps, also, in some other cases; but I presume it is not carried out with that vigor, with that rigid demand for examination that is required at that School. We might also exclude perhaps the Military Schools at West Point, and Annapolis; but they are very different from the common systems, and are not included in our system of education. I have seen the effect of these examinations upon the Lawrence Scientific School, and I am satisfied that it will at once make a change which it is hardly possible to estimate upon the character of that school, and of all schools founded upon that system. I believe that it will be known hereafter as the model school in that respect; simply because the degrees are given after a very rigid and thorough examination, and only given to those who have successfully passed such an examination. The degrees given, and the different certificates, are taken from the idea of the German and Russian institutions, so ably developed in President Tappan's address. We give the titles, Cum Laude, Magna Cum Laude, and Summa Cum Laude. The consequence is, that the pupils have become stimulated by these examinations to a most extraordinary, not to say sudden manner. Through the school the effect was instantaneous, when they found that the examinations were real examinations. The anxiety to get a high degree, is intense; and it is an ambition accompanied with no rivalry, because every one who deserves it gets it. One man does not put down another by getting it. Another consequence of this plan, is, that the time becomes at once unlimited. It is true that we passed the condition that we would not give an examination until he had been two years in the institution; but this last year, the students examined,—and there were only half a dozen examined—had been in the mere chemical school alone, a period varying from four to six years before they were willing to offer themselves for examination. The consequence was that every one of them had the award of Summa Cum Laude; and they were examinations such as I never before thought possible. They were examinations which these young men, who had been subjected to scientific training only, without the opportunity of classical education, of that admirable classical drilling which we have certainly introduced into our schools, passed the examination as I think no other men could have done, with all the accuracy, all the rigor of a West Point examination. The best scholars at West Point could not have shown themselves more ready; and they were examined upon the highest points of chemistry, each of them being at the blackboard for four or five hours in continuous examination upon the most difficult questions in the Science. One of them, indeed, gave an entirely new mode of investigation, original with himself, upon a subject that some of the eminent chemists of Europe had undertaken in vain to solve. (Applause.) This result was exclusively, I believe, and as I think these young men will tell you, because we had the examinations. There were opportunities offered for education, but not greater than could be obtained almost anywhere without difficulty. They saw the importance of the opportunity,

the moment they saw what there were to be gained by it, and therefore they availed themselves of it. In the school of engineering also, the young men were examined. There were ten or a dozen examined, some of whom received the degree of *Summâ Cum Laude*, some that of *Magnâ Cum Laude*, and some merely that of *Cum Laude*. The year before there had been a few students who could not pass the examination, although they did very well. They were disappointed; but they re-appeared the next year, and then passed the examination, and some of them succeeded in winning a *Summâ Cum Laude*. One of these young men obtained only the *Magnâ Cum Laude*. He said that the examination was fair, he was only entitled to the *Magnâ Cum Laude*, but he was so dissatisfied with himself because he ought to have got more, that he said, I will not take it this year; if you can not give me more than that, I will try again next year. And he is now studying and will not be satisfied until he gets the higher side. It seems to me that we cannot have a more decided and positive proof than this of the value of such a degree given under such circumstances; it ceases to be a name. It is a direct stimulus to education, and a stimulus, which lies in the right way, without raising any bad feelings; and yet it is as strong a stimulus as we can well devise.

It is interesting also to find that this system was introduced, although in an institution connected with the old forms of a college, yet not in an old college. Although I have been connected with these systems for twenty-five years, still I do not hesitate to say that I feel the great difficulties of the arrangement. I feel that it is hardly true in us to palm off with the name of well educated men—because the degree of Bachelor of Arts implies that—those who are not well educated. The President of the College in conferring this degree, says to the Governor of our State, when he is present, that he *knows* them to be well educated, and yet he knows that a great many are not. And thus the great *Scio* has got to be an object of ridicule. I think it is a wrong, and a great wrong, that our certificates of education should have upon the face of them a falsehood. This ought to be remedied; and I believe that if this Association would vigorously stand up and say that this shall be amended, they can carry it through, and the result will be a really American system of education, even if it may have its foundation in Prussia.

MR. WILLIAM B. FOWLE, of Boston, Mass., remarked :—

There exists in this country the most gross inequality in the matter of education. Our declaration of political rights is most signally falsified in this particular. School Districts, Towns, and States, differ as well in the means, as in the condition of education—both in the elementary and higher forms. The only remedy for this inequality, is in applying broadly and universally, the principle relied upon for sustaining a University—that the State should interpose its authority and means to provide institutions of different grades, each as perfect in its appliances as possible, and then enforce on every family the duty of availing itself of these or some other institutions, for the highest moral, intellectual, and physical education of every child.

VL THE HIGHER SPECIAL SCHOOLS

OF SCIENCE AND LITERATURE IN FRANCE.

BY DANIEL C. GILMAN, A. M., NEW HAVEN, CONN.

THE contrast between America and Europe in the attention which is paid to special professional education is far greater than is generally supposed.

In the United States the importance of special education in the three learned professions of law, medicine, and theology, has long been recognized, and excellent schools, in which these sciences are taught are established in various parts of the country. Congress has made provision for the instruction of army officers at West Point, and of navy officers at Annapolis; the state governments in Massachusetts, Rhode Island, Connecticut, New York, New Jersey, and Michigan, have organized normal schools for the education of teachers in common, or public elementary schools; some incompletely furnished institutions have assumed the title "Polytechnic,"—and here until quite recently have ended all attempts in this country to provide for special professional education. Within a few years past a slight advance has been perceptible. Arrangements have been made at Harvard, Yale, Dartmouth, Union, Brown, and perhaps in other colleges and universities, for instruction in applied chemistry and engineering, and "scientific schools" have been formally organized in connection with the three first named of these institutions. A large sum of money has been bequeathed in Massachusetts, for an agricultural school, and two or three State Legislatures have taken measures for the foundation of similar establishments.

Yet there still exists a lamentable ignorance as to the extent to which special schools, and particularly schools of science, are established abroad, for it can hardly be doubted that if a knowledge of their number, character and influence, were generally diffused among the people of this country, they would provide for themselves the same means of education which despotic governments have found contributing so much to the welfare and happiness of their subjects.

In a previous number of this Journal,* a list was given of the special schools, (*Fach-schulen*), established in the different states of Germany. In further illustration of the acknowledged value of such

* Vol. I., p. 328.

institutions, it is proposed to cite the example of another country, which in spite of its frequent revolutions, maintains a proud preëminence in the application of science and art to the general wants of men.

FRANCE is distinguished among European nations for the number, variety and excellence of schools which provide for special professional education. Under the direction of the government, are not less than nine schools of law, at Paris, Aix, Caen, Dijon, Grenoble, Poitiers, Rennes, Strasbourg, and Toulouse; three schools of medicine, at Paris, Montpellier, and Strasbourg; three schools of pharmacy at the same places; six faculties of theology, and eighty-three grand seminaries of theology of the Catholic church, (one in almost every diocese,) two Protestant faculties and seminaries at Strasbourg and Montauban, and a Rabbinical school at Metz. In the different departments there are not less than eighty-three seminaries or normal schools for male and female teachers. Special provision is made for military and naval instruction in the celebrated Imperial school at Saint Cyr, for the training of infantry, artillery and cavalry officers; in the Imperial naval school at Brest, (upon the vessel *le Borda*,) for the education of officers of the government marine; and in the Imperial school of military medicine and pharmacy at Paris, for the education of army physicians.

But in this article it is proposed to speak of the advantages which are offered in France for acquiring a superior education in special departments of learning, aside from law, medicine, and theology, or military and naval science.

Provision of the most liberal character is made for advanced scientific and literary education in the faculties of the *University*. The title "University" was formerly applied in France, as it still is in Germany to separate institutions of learning, of which there were many,—that of Paris, being the most celebrated. After the great revolution, Napoleon arranged all the departments of public instruction in the empire into one system, which was styled *the University of France*. This appellation, if not formally, is virtually dropped at present, but the "Faculties" of the university are still, and always have been spoken of much in the same way as in Germany and other countries.

Thus the system of public instruction in France, recognizes five distinct faculties; theology, law, medicine, physical and mathematical sciences and letters.

In the empire there are 16 faculties of science, sometimes associated with, and sometimes disconnected from the other faculties above named. They are established at Paris, Besancon, Bordeaux, Caen,

Clermont, Dijon, Grenoble, Lille, Lyon, Marseilles, Montpellier, Nancy, Poitiers, Rennes, Strasbourg and Toulouse.

The scientific faculty at Paris, in the Sorbonne, numbers eighteen professors, (besides five *agrégés**) among whom are many men of the highest distinction, Leverrier, Dumas, Milne-Edwards, &c.

The following are the present departments of instruction;—physical astronomy; mathematical astronomy; higher algebra; higher geometry; differential and integral calculus; mechanics; physical and experimental mechanics; calculus of probabilities, and mathematical physics; general physics, (two professors;) chemistry, (two professors;) mineralogy; geology; botany; general physiology; zoölogy, anatomy, and physiology; anatomy, comparative physiology and zoölogy.

The other faculties of science are naturally less complete than that of Paris, and it is deemed enough to mention the number of professors, without specifying their departments. It is as follows: Besancon, six; Bordeaux, six; Caen, five; Clermont, four; Dijon, six; Grenoble, five; Lille, four; Lyon, seven; Marseilles, four; Montpellier, seven; Nancy, four; Poitiers, four; Rennes, six; Strasbourg, six; Toulouse, eight.

The faculties of letters in France are 16 in number, and are in the same towns with the faculties of science, except that there are two of the former at Aix and Douai, and none at Lille and Marseilles. At Paris, in the Sorbonne, twelve chairs are occupied by this faculty, namely; philosophy, history of philosophy, Greek literature, Latin eloquence, Latin poetry, French eloquence, French poetry, foreign literature, comparative grammar, ancient history, modern history, and geography. There are four honorary professors, Messrs. Guizot, Villemain, Cousin, and Boissonade, and twenty *agrégés*. In the provincial towns, the number of professors in the faculty of Letters, is nearly the same as in that of the faculties of science.

There are four schools of a preparatory character, in which there are instructors both of Science and Letters at Angers, Mulhouse, Nantes and Rouen.

Subordinate to these faculties are the lyceums, 62 in number, and colleges, 245 in number, which are "secondary" in their rank, and hold nearly the same position in France, as the gymnasiums and real-schools in Germany. The limits of this article will not allow of their examination.

There is one college, however, which is an exception,—the Imperial College of France, which was founded in 1530. Although now

* The *agrégés* in France correspond nearly to the Privat Dozenten in Germany.

nominally under the ministry of public instruction, it has always been an independent establishment, and was not even included in the university organization of the Emperor Napoleon. In this institution there are thirty-four readers and professors in the following departments:—astronomy, mathematics, general and mathematical physics, general and experimental physics, chemistry, medicine, natural history of inorganic bodies, natural history of organic bodies, comparative embryology, natural and statute law, history of legislation, political economy, history and morals, archæology, Hebrew, Chaldaic, and Syriac languages, Arabic language, Persian language, Turkish language, Chinese and Tartar-mandchou language and literature, Sanskrit language, Greek language and literature, Latin eloquence, Latin poetry, Greek and Latin philosophy, French language and literature in the middle ages, modern French language and literature, languages and literature of modern Europe, Slavic languages and literature.

Some of the professors here, are also professors at the Sorbonne. Many of their names are of the highest distinction for example. Michel Chevalier, Elie de Beaumont, Biot, Stanislas Julien, &c.

In this place may also be mentioned the lectures of the Museum of Natural History, at the celebrated Garden of Plants. Connected with this institution are professors devoted to the following departments of natural history and science; comparative physiology; comparative anatomy; anatomy, and natural history of man; zoölogy, (mammalia and birds;) zoölogy, (reptiles and fishes;) zoölogy, (insecta, crustacea, and arachnides;) zoölogy, (Annelides, molluscs, and zoöphytes;) botany; cultivation; geology; mineralogy; palæontology; physics applied to natural history; organic chemistry; inorganic chemistry.

It thus appears that in sixteen faculties of science, the college of France, and the museum of natural history, instruction in pure science, of the most elevated order is provided, and that in sixteen faculties of letters, corresponding advantages are offered for literary pursuits.

But this is by no means all. The natural sciences, in their applications, are taught in a large number of central schools, established for the most part at Paris, and usually bearing the title "Imperial," as a recognition of the high estimation in which they are held by the government. In the provincial cities and towns, subordinate schools of science are found, of grades which correspond to the "Secondary," and "Primary" schools, ordinarily so called in the continental systems of public instruction. Many graduates of the higher Imperial schools become teachers in the lower schools, by means of which a practical knowledge of science is well diffused among all

classes in society. Other graduates of the higher schools ultimately take the chief direction of mines, chemical and other manufacturing establishments, works of civil engineering, architectural undertakings, and immense landed estates, or they enter some administrative department of the government which demands a deep knowledge of science, for example, the mint, the inspection of drugs, foods, &c.; while the subordinate positions, either in industrial callings, or in these branches of civil service are filled by those who have studied in the lower class of schools. There are also special schools of a Literary character.

From the institutions for instruction in pure science, and in the highest departments of literature, we accordingly pass to a consideration of those institutions in which the applications of science hold a prominent place, or literary pursuits are followed with some practical aim. Information mostly derived from official sources, will be given concerning all the more important, beginning with those of a literary character.

The following special schools of language and history are established by the French government.

1. *The Imperial School of Records*, (*Ecole des Chartes*), at Paris. This institution, begun in 1821, and connected with the Imperial Library, prepares young men for the duties of librarians and keepers of public archives. Candidates for admission must be not less than 24 years old, and must have received the degree of *Bachelier ès Lettres*. The course of studies occupies three years, at the end of which those who have passed a successful examination, receive the diploma of *Archiviste paléographe*. This diploma gives the right to a salary of 600 francs for three years to six former pupils of the school. This right is lost by refusing to accept a position in the public employments open to the archivists, such as the duties of librarians, archive keepers, teachers in the *Ecole des Chartes*, &c. There are eight scholarships, (*bourses*), open to the pupils of this school, the annual income of each being 600 francs. The pupils are charged with the publication of the *Documents inédits de l'histoire de France*.

There are seven professors in the school who instruct in the deciphering of manuscripts and documents, in geography and history, the use of seals, value of monies and measures, study of languages, archæology, &c., &c.

2. *School of living Oriental Languages*. This school, also connected with the Imperial Library, was founded in 1795, with a view to advancing the interests of the government service, military and civil, in Asia and Africa, and at the same time, to encouraging linguistic science. There are nine chairs, namely,—Arabic; Persian; Tur-

kish ; Armenian ; modern Greek, and Greek Palæography ; common Arabic ; Hindoostani ; Chinese ; Malay, and Japanese.

3. *Course in Archaeology.* A course of instruction in Archaeology in connection with the cabinet of medals in the Imperial Library, was commenced in 1795, with a view to making known the monuments of art and the historical monuments of antiquity.

4. *French School at Athens, Greece.* The object of this school is to give young professors the means of perfecting themselves in the language, history and antiquities of Greece. The members of the school are named by the minister of public instruction, after a special examination in the Greek language, ancient and modern, the elements of palæography and archaeology, and the history and geography of Greece. They reside at Athens two years, (and may do so by special permission for a third year,) during which time they receive a special salary.

We now proceed to consider separately, the higher institutions for instruction in the applications of science. They vary of course in their character, rank, and requirements for admission. Some of them are under the direction of the ministry of public instruction, others under the ministry of agriculture, commerce, and public works, the ministry of the interior, and the ministry of war. As it is difficult to choose a proper order for their enumeration, that of the *Annuaire de l'Instruction Publique*, will here be followed.

1. *Imperial Schools of Agriculture* are established at Grignon, Grand-Jouan, and la Saulsaie, and St. Angean. Candidates for admission must be at least 17 years old, and must pass an examination in arithmetic, geometry, and physics, and in French orthography, and grammar. The course of studies lasts three years, at the end of which certificates of capacity are awarded.

In addition to these three high schools of agriculture, there are forty-nine of subordinate farm schools, (*fermes-écoles*), situated in the different departments of the empire.

2. *Imperial Veterinary Schools* are located at Alfort, Lyon, and Toulouse. These schools are to train veterinary surgeons, for military and civil service. The candidates for admission must be between 17 and 25 years old, and the course of studies last four years.

3. *Imperial Schools of Arts and Trades* have been founded at Châlons sur Marne, since the year of the Republic ; at Angers since 1811 ; and Aix since 1843. Pupils to be admitted must be between 15 and 17 years old ; their instruction continues for three years, and is both theoretical and practical in its character. The scholars are fitted to be the heads of manufacturing establishments, foremen in

shops, &c., receiving a more practical education than in the following higher schools.

4. *The Central School of Arts and Manufactures* at Paris, was begun in 1829 as a private institution, intended to prepare civil engineers, directors of manufactories, professors of applied science, &c. It is now under government direction, and prepares its pupils in four specialties; chemistry, mechanics, metal working, and civil engineering. Candidates for admission must be at least 16 years old, and must pass a satisfactory examination in arithmetic, algebra, geometry, and designing. The complete course of instruction extends through three years. In the third year pupils may be examined for the diploma of civil engineer, and certificates of capacity may be awarded to those who excel only in some of the departments of study.

5. *The Imperial School of Mines*, at Paris, is designed to train government engineers, but pupils are received who do not intend to enter the public service. Candidates for entrance must be between 18 and 25 years of age, and must pass an examination in arithmetic, algebra, geometry, rectilinear trigonometry, theory and use of logarithms, elements of analytical geometry, and elements of statics. They must have some acquaintance with the practice of design.

The course of studies last three years, and instruction is gratuitous.

6. *School of master workmen in Mines* at Alais. This school is for educating foremen of mines, who shall have sufficient practical skill to guide the workmen, and enough theoretical knowledge to understand and execute the orders of the Director of the mine. The candidate for admission must be 16 years old, and must be able to cipher and understand the metrical system of weights and measures. The studies continue through two years, at the end of which the certificate of master miner is given to those who are qualified for it.

7. *School of Miners at Saint Etienne*. This institution is designed to train directors of mines, metallurgical establishments, &c. No one can be admitted who is less than 16 or more than 25 years of age. The preliminary examination requires a knowledge of the French language, arithmetic, elementary geometry and algebra, and the elements of linear design. The course of instruction, lasting three years is gratuitous. Certificates of capacity are awarded at its close.

8. *Imperial School of Forestry*, at Nancy. This institution is to train young men for the service of the administration of forests, a department of the government peculiarly important in France, on account of the high price of fuel, timber, &c. Pupils seeking admission, must be not less than 19 years of age, and not more than 22.

It has been rendered illustrious by the learned labors of Buffon, Cuvier, and a host of other distinguished men. Besides the grand galleries of Anatomy and Botany, there is a magnificent gallery of Mineralogy and Geology, all of them situated in a beautiful garden devoted to the Horticultural, Botanical, and Zoölogical part of the establishment. There are lectures delivered gratis upon Chemistry by Frémy, Electricity Becquerel, Geology by Cordier, Mineralogy by Dufrenoy, and on other subjects by men equally celebrated, such as D'Orbigny and St. Hilaire. And for the purpose of giving a more thorough and complete sort of instruction than can ever be conveyed by ordinary lectures, the 'Cours Partiques d'Histoire Naturelle' have been established, or 'Repetitions de Minéralogie, de Geologie, de Botanique, et de Zoölogie, avec manipulations et nombreux exercices à l'aide d'instruments et d'échantillons,' with charges for the *whole* of the four courses, \$25; for one set of lectures, \$6; for more than one, \$5 each. Or should the student wish for more special instruction still than this, he can obtain it on any branch of Natural Science for 5fr. or \$1 per lesson from any of the Assistants at the Jardin des Plantes, accompanied with the free use and examination of instruments and specimens, and what perhaps is of more advantage, a thorough initiation under their eye, into all the curiosities and treasures of these vast, beautiful, and costly collections, in many respects, probably the most complete that can be found. It will be seen, therefore, by the student, that in Paris he can have the command of all possible advantages for the prosecution of scientific studies, most of them gratis, and the rest at a moderate price."

LOVE, HOPE, AND PATIENCE.

"O'er wayward childhood would'st thou hold firm rule,
 And sun thee in the light of happy faces,
 Love, Hope, and Patience, these must be thy graces,
 And in thine own heart let them first keep school.
 For as old Atlas on his broad neck places
 Heaven's starry globe, and there sustains it;—so
 Do these upbear the little world below,
 Of education,—Patience, Love, and Hope.
 Methinks I see them grouped in seemly show,
 The straitened arms upraised, the palms aslope,
 And robes that, touching as adown they flow,
 Distinctly blend, like snow embossed in snow.
 O part them never! If Hope prostrate lie,
 Love too will sink and die.
 But Love is subtle, and doth proof derive
 From her own life that hope is yet alive;
 And bending o'er, with soul-transfusing eyes,
 And the soft murmur of the mother dove,
 Woos back the fleeting spirit, and half supplies;
 Thus Love repays to Hope what Hope first gave to love.
 Yet haply there will come a weary day,
 When overtaken at length
 Both Love and Hope beneath the load give way.
 Then with a statue's smile, a statue's strength,
 Stands the mute sister, Patience, nothing loth,
 And both supporting does the work of both."

S. T. COLERIDGE.

VII. LETTERS TO A YOUNG TEACHER.

BY GIDEON F. THAYER,

Late Principal of Chauncy-Hall School, Boston.

BEFORE attempting to illustrate the principles laid down in my May letter, and show their application to the business of the school-room, I will devote one letter mainly to the subject of *manners*; a subject scarcely inferior in importance to that of *morals* themselves. *Morals* form the basis of human character; but *manners* are its decorations, and aids to its developments. *Morals* are the staple of human laws, the grand regulators (or should be) of human governments; *manners* are their gildings, which tend to soften their asperities, and win a more ready acquiescence in their observance. *Morals* are the solid bullion, forming the foundation of the currency of a community; *manners*, the small notes or coins, ever ready for use, and without which the business intercourse of mankind must cease, or retrograde to the condition of things that existed in the world's infancy. In fine, *morals* are the sun behind a cloud, which, though giving light to the world, lacks the genial force of its shining face; *manners* are the agencies that displace the cloud, and reveal the glorious orb in all its original power.

We hence perceive an intimate connection between the two. Neither is complete in itself. One is the complement of the other. They should not be separated. *Morals* divorced from *manners*, would be cold and repulsive; united to them, they become attractive and pleasing. While *manners*, unasociated with *morals*, degenerate into hypocrisy—furnishing an illustration of the “whited sepulchre” of the New Testament.

Let it be understood, then, that in speaking of *manners*, *civility*, *courtesy*, or *politeness*,—for I shall use them synonymously,—I allude to them as having a right foundation, and as belonging to moral duty. They give a charm to social intercourse, which nothing else can supply. This is a fact universally admitted; and yet one that seems to be less practised upon, in each succeeding year of our nation's history.

It was once a sufficient guaranty for gentlemanly *manners*, that the individual had been reared by respectable parents. This is now by no means a conclusive inference. Family training, in many instances,—

perhaps in a majority,—has fallen into disuse; and chance, or the will of the young, has taken its place. The respect always due to parents, to seniors in age, to superiors in station, in wisdom, and virtue, has so nearly died out in this country, as to have undermined the very foundation of that for which I am pleading. For, if from those whose claims are of a paramount nature, the ordinary civilities of refined life are withheld, it is in vain to expect they will be extended to the stranger, encountered in the marts of business, the walks of pleasure, or the rounds of general intercourse.

An apostle, in writing to a young friend, says, in speaking of children, “let them learn to show piety at home,”—meaning *duty to parents, or those in superior relation*. Here, then, *at home*, is where the sentiment is to take root, be nurtured, and made to grow. Its influence will then go forth with the young, controlling their behavior towards others, and checking that rudeness which has become a reproach to our country among the more civilized nations of the earth.

Since, then, this duty has come to be so much neglected by those on whom it naturally devolves, the teacher is to exercise double diligence in its inculcation. And, although it may be very discouraging, especially at the outset of your teaching, to think that you work single-handed, let me entreat you to take courage; to assure you that, in most cases, your efforts will be appreciated and seconded at the homes of the pupils. It is not that fathers and mothers do not *wish* to have their children grow up, adorned with the graces, as well as imbued with the good morals, properly belonging to a Christian community: they are very glad to have this boon bestowed upon them; but the pursuit of business—the accumulation of wealth—engrosses the father’s attention, absorbs his time, and leaves him no leisure for the home instruction of his children. The mother may do what she can, but without her husband’s coöperation, her best endeavors are often neutralized. When, however, she finds the work begun at school, she is eager in assisting the teacher to carry out his plans. Ascertaining what they are, she strives to enforce them when the children are in her presence, and each aids the other in the good work.

But how are the details in this training to be carried into practice? To answer this, involves numerous particulars. To teach penmanship well, a man must write well himself; to make good readers, he must read well; to make good mathematicians, he must understand well the subject. “As is the teacher, so is the school.” The aim and effort of the man, who would impress the stamp of the Christian gentleman upon the manners, habits, and character, of each one of his pupils, must be to *deserve that appellation himself!* In proportion

as he merits this, will he succeed in multiplying the copies of so desirable a work.

Let us now ascertain the elements of genuine politeness. The counterfeit we should eschew as we would a spurious bank-note. It can have no connection with morals; and it is politeness, as coadjutor with morals, which it is our purpose to encourage and promote.

Politeness, or good manners, then, we consider as the offspring of benevolence, love, or kindness of heart. Its aim is to make others happy; to smooth down the rough edges and sharp points to be met in our collisions with society, and thus to prevent that friction from human intercourse which is inevitable without the exercise of this meliorating grace. From the uncouth bearing of many individuals, it may be deemed impossible, in their cases, to add or develop this grace; and it is admitted that the task will not be a light one. But there is a germ of the "raw material" in every human soul; and the business of the educator is to unfold, to form, and direct it. This will be difficult or easy, according to the temperament of the respective subjects; but, be assured, it is invariably attainable, although not in equal degrees. Every one may be taught, by proper attention and needful skill, to write well; but no human power can make elegant penmen of all. Some have an innate incapacity for the perfection of the art. So it is with forming the manners. Still, this should furnish no excuse for omitting the attempt. The effort is all the more necessary. When Lowell Mason, nearly thirty years ago, introduced instruction in vocal music into the school with which I was then connected, in trying the voices of the pupils, he discovered that some possessed very limited vocal power—capable of sounding no more than three notes of the scale; but he did not turn them aside, saying, —as had been the practice with his predecessors in teaching the art, —that "they had no voice, and could never make singers;" no; he said, wisely, that they needed instruction and training so much the more, that their natural deficiencies might be, to some extent, counteracted; and the result proved the soundness of his judgment. In six months they had nearly doubled their power, and could sound, some five, some six notes.

Some persons are, apparently, *born* ladies or gentlemen, and require little or no direction from others. Some, with an intuitive faculty of imitation, take on the most agreeable and finished manners, from being surrounded by suitable examples. Others, of an easy and good-natured temperament, float on under its influence, securing the good will of their associates, quite unconsciously and without effort.

But a large majority of children, at the school-going age, are (to borrow Addison's idea) like the marble in the quarry, and need the hand of the polisher to develop their latent capabilities.

Impressed, then, with these truths, I would say to you, my young brother, let the Courtesy of the Heart distinguish your whole deportment—when instructing a class, as well as when in private conversation with their parents or others; at home and abroad; in your own study, and at the public exhibition. Have not one code of manners for the fireside or the school-room, and another for company; excepting in the degrees of deference which different ages and stations demand. These are recognized and claimed by the hand-book of our divine religion. Never lose your self-respect, your good language, your temper, nor your philanthropy. To do either of these would undo the beneficial effect of a long course of verbal instruction.

Many young men, at college and elsewhere, away from the restraining and refining influence of the gentler sex, acquire ungainly habits, which they afterwards continue to practise, perhaps unconsciously, even when they have become teachers,—such as throwing the chair back and causing it to rest on its two hind legs; putting the feet, raised breast-high, on the desk or form in the school-room; cutting and scraping the nails in company, &c., very much to the scandal of the profession, and highly derogatory to the delinquents. I need not say how ill-bred, how disgusting such habits are.

Few persons, of ordinary reflection, need be in doubt on any point of good or ill breeding. When a common instinct or sense of propriety fails to settle the point in your mind, the example of the individual among your acquaintance, of acknowledged taste and refinement, may be relied on as a safe guide.

Although conventional usage fixes a certain standard of civility for its own observance in almost every country, there are certain laws of courtesy, that are universal among civilized nations: one of which is, to avoid doing whatever may offend the taste, delicacy, or feelings, of the company in which we are. Another, to do what will contribute to the happiness, pleasure, or innocent enjoyment of one's associates. A third, to waive, for another's comfort, any little gratification to ourselves. He who is not prepared to adopt, for his own guidance, these fundamental rules of genuine politeness, will fail to rise to any considerable eminence among the truly polite, and must present to others but a poor model for their imitation.

There is a *prestige* in the very bearing of a man of genuine good-breeding, which every one feels on entering his presence. I remem-

ber to have heard an illustration of this, many years ago. Governor Everett, of Massachusetts, widely known as an accomplished gentleman, frequently visited a primary school in the city of Boston, when every pupil evinced, by his deportment, that he *felt* the influence of the Governor's courteous manners, even before he spoke; and on one occasion a little pupil said to the teacher, after he had withdrawn, "Miss Brown, I always feel just as if I must keep bowing, when that gentleman comes into school."

It has been said, and often written as a copy-slip, for the last fifty years or more, that "Amiable manners adorn correct morals." And that "A man's manners form his fortune." They do more: before we have ascertained whether a man possess *any* morals or not, his manners have already made an impression on our minds and feelings. Stranger though he be to us, our opinion of him is formed, either of favor, indifference, or dislike. We may do him injustice. He may be repulsive in his exterior, and yet a man of sterling merit; while, on the other hand, with all the graceful externals of a gentleman, he may be a knave. There is no infallible rule in the case. One thing, however, is certain: he is not more likely to be unworthy for being agreeable; and his manners are always considered as a recommendation. They are like well-known coins of acknowledged value, current at every counter; while stern integrity, destitute of external grace, like bills of exchange without an endorser, are slow to be accepted. *Time* usually does all men justice; but before some individuals have, by a long course of good conduct, proved to others their real worth, the tide in their affairs which leads to fortune has begun to ebb, and the flood may not again return.

Further. Good manners are not merely a selfish good: they please and gratify others. They generate confidence and allay irritated feeling. The mother, how ill-regulated soever her own children may be, points to those of her neighbor, who are well-bred, as patterns for their imitation; while the man of self-discipline, struck by their charm, endeavors to reproduce them in his own demeanor.

The manifestations of good manners, in the many trifling particulars which they involve, are so insignificant, individually considered, as to almost forbid their introduction into this letter; but as it may fall under the eye of some of those who are to be *ultimately*, if not *directly*, benefited by the views herein presented, I will venture—though with some misgivings—to present a specimen.

The *bow*, among most of the civilized nations of the world, is a common token of respect and courtesy, although it is sometimes used

merely as a sign of recognition among familiar acquaintances. In the rural portions of our own country, it is considered a synonyme for *manners*, in boys, as is courtesy, in girls; and the good dame says to her sons, on the entrance of a visitor, "Make your manners, children." It formerly was, also, a synonyme for *reverence* in the same connection.

It has been spoken of as one of the most potent ceremonies current among men; and truly it may not, in its consequences, be easily overrated. It is an act whose significance every one comprehends, and secures, at sight, the compliment it deserves. Nay, it is not too much to say, that to a well-timed and graceful bow, many a lad has been indebted for his position and distinction among men; and it will ever continue to be so, as long as civility is appreciated by mankind, and this continues to be one of its acknowledged expressions.

Perhaps this is founded on a principle in the human mind, that may be deemed selfish—the bow being a manifestation of respect or courtesy to the individual receiving the salutation; or it may be a feeling of gratification that the youth is thus entering for himself on a course that will conduct him to respectability and honor. Whatever the cause, the effect is certain; and it were to be wished that the efforts of teachers might lead to a more general observance of the practice in question.

Macklin, in his *Man of the World*, makes Sir Pertinax speak of it as the very pledge of thrift; acknowledging that *his* success in life had been owing, almost exclusively, to the omnipotent "boo," as he gave it. While our own Franklin encourages a similar idea, in his lessons to young men, on success in the world. And Shakspeare, by Hamlet, introduces the same thought in his speech, where he says,

"And crook the pregnant hinges of the knee,
Where thrift may follow fawning."

But if it were observed as a hollow ceremony alone, to secure goodwill and lay the foundation of fortune, I should consider it contemptible, and unworthy a young, frank, and generous mind. O, teach not the unsophisticated beings under your care, anything so foreign to the purposes of your holy office!

I wish to speak of it in a simpler and a better sense—merely as an expression of politeness or deference. And, however obsolete it may have become with a portion of our young people, I say, *let it be revived*—especially at school; on entering or leaving, on receiving or giving anything. Let it, also, be observed at home, in the street, in company; wherever, in short, personal communication is held with others, or another, by word or action. To ladies, to teachers, to gen-

lemen in advanced life, let the hat be lifted wholly from the head ; with others, a touching of the hat will suffice, or—if on perfectly familiar terms with the person saluted—the touching of the hat may be omitted.

These distinctions should not be forgotten. A few specimens of the “good old English gentleman” and of the well-bred men of our own country of the Washington stamp, yet survive, who exemplify the grandeur and gracefulness of this style of manners. Would there were more, and that we could arrest the rapid decadence of their practice !

There is no one thing, in itself so trivial, that would tend more powerfully to arrest the tide of rudeness that is sweeping over our land, and carrying our character for respectability away with it, than the reëstablishment of this ancient token of good breeding.

Along with this, I would insist on the addenda of *sir* and *ma'am* (or *madam*), in conversation with persons to whom they properly belong. An observance of this is indispensable to the preservation of the various grades and classes of persons in their appropriate spheres. I am not speaking of *castes* in our community,—I repudiate the idea, —but of those divisions marked by nature itself, so necessary to be preserved, and on which the permanent welfare of our people, in a great measure, depends.

These two ceremonies restored and continued in use among us, would reintroduce a class of individuals into our community, which once formed a most interesting connecting link between childhood and youth or early manhood, but which, of late years, has followed in the track of the “lost arts”—boyhood and girlhood having been practically expunged from the natural series or stages of life !

It is a failing to observe the injunction, “not to think more highly of himself than one ought to think,” that has foisted upon us this evil. Rushing to secure the best seats at a public table, appropriating to self the most desirable accommodations in a public vehicle, smoking in presence of others, without ascertaining whether agreeable to the company or not—and even when ladies are present:—these are some of the natural consequences of the new *civilization*. Wearing the hat in the house, engrossing the conversation in company, sitting while their elders are standing, impatience or greediness at table, appropriating personally some delicacy intended as a compliment to a guest or honored friend present, omitting those little attentions and courtesies, which give such an indescribable charm to the social meal, —which are all found in the well-bred man’s code of *table manners*,—are among the minor fruits of the system of “Young America.”

These things should be noted, deprecated, and corrected. By making them subjects of specific instruction in school, you will confer a lasting and important benefit on the community among whom you labor, while you make your own intercourse with the young a source of continually-increasing satisfaction to yourself.

The countenance of the teacher should wear a benign, or, at least, a calm aspect, that it may not contradict the gentle or courteous language he uses in his intercourse with his school. The salutations at meeting in the morning, and the adieus at parting, should, always when practicable, be practised by the teacher. They tell on the heart not less than on the manners of the young. Compare the families of those where this practice is regarded, with those where it is neglected. I need no other advocate than this comparison, for its observance, among all of even moderate discrimination. The contrast presented, is attraction and repulsion; beauty and deformity; refinement and barbarism.

Politeness is not only for all times, but for all persons; is not to be wholly neglected in the intercourse even of school-children. Some liberties may very properly be indulged in among them, as familiar acquaintances, but these must have their limits; and such intimacies will be profitable or injurious in proportion as this direction is observed or disregarded.

In the conjugal relation, too, particular attention should be given to it; nor do I consider the remark out of place here, although the object of these letters is to reach the young of the school-going age, through the agency of the teacher. Cicero would have boys taught at school those things which they are to practise as men. The rule applies to youth of both sexes; and when a life-union shall be formed between any two of them,—I care not how much of love or admiration they mutually feel,—there must subsist a sufficient degree of reciprocal respect to secure a courteous demeanor, or affection itself will die out. Let the young cherish this idea, if they would realize, in the future, their previous dreams of connubial happiness.

Servants have a claim to our civility, and it has become proverbial that the true gentleman is known, when away from home, by his deportment to this class of persons.

I have, in these remarks, adverted principally to the *boys* under your charge; but, as far as they are applicable to the other sex, I would have them applied with the utmost stringency. More delicate and refined by nature, there is less occasion for such lessons to them. Still, all coarseness in a girl or young woman is a thousand times more repulsive than when exhibited by one of our own sex.—There is

one point that I may not pass over here. I have spoken of the self-forgetfulness to be practised, and the small personal sacrifices to be made to others, particularly to ladies and elderly persons, in travelling; and I grant that, with comparatively few exceptions, among those who travel much, there is little room for complaint against those who consider themselves gentlemen; and this offers an encouragement to the teacher, that those whom he is now striving to mould, may, as they assume their place among men, present a just claim to that title. The point that I wish to introduce here is this: Throughout New England, such a degree of deference is usually extended to Woman, that there are individuals of the sex who *claim*, with no doubtful expression, certain privileges from our sex, which every right-minded man will be always ready most cheerfully to yield, but which he is not so willing to surrender at command. In our lecture-rooms, in public travelling conveyances, there is an essential difference in the quality or convenience of the seats. A man appropriates a large amount of time, in going early, that he may secure the wished-for accommodation. One of the other sex comes in, an hour afterwards, it may be, and expects that he will surrender the seat to her at discretion. He does so; but, instead of acknowledging his civility by word or look, she looks upon him with a countenance full of indignation or offended dignity, most emphatically expressing the idea, "You are very impertinent to keep me standing so long in the aisle!"

Every day, gentlemen give up desirable seats in railroad cars, and stand till a vacancy occurs; or take an outside seat in an omnibus, to accommodate a lady within, while a toss of the head, indicating impatience that they did not make the movement more readily, is the only return for the civility! Now, I would have boys taught to practise the very extreme of courtesy—to forego the better for the poorer accommodation, in favor of a lady; but it is the bounden duty of the recipient to express, in civil terms, her appreciation of the kindness in such case. This, therefore, is the lesson I would have taught to the girls—or those that occupy the place that girls *formerly* held in schools—by the learning and practising of which only, they can expect to secure their prerogative, or prove themselves worthy the kind consideration of man. Let it be remembered that she has no *legal* claim to this advantage; that its surrender is a free-will offering on the altar of politeness; that, therefore, the return—the simplest and most obvious on her part—can be nothing short of a courteous word of thanks or acknowledgment, endorsed by a kindly expression of countenance. By this, the civility of the man is felt by him to be

fully repaid, and he has hence every encouragement to persevere in his agreeable duty.

I am aware there are numerous exceptions to this mode of receiving these trifling favors; that there exist many examples of all that is elegant in manners, charming in expression, and fascinating in tone, among our accomplished women; but still a false notion prevails with so many others, as to render it important to present the matter as I have done to your attention.

There are few positions in life which furnish so many opportunities for the exercise of good breeding, as travelling. Innumerable occasions occur for removing petty annoyances, promoting the comfort, and adding to the satisfaction of others, which the amiable voyager will not fail to notice and embrace, exciting fellow-travellers to similar acts, increasing the sum of human enjoyment, and proving an authentic claim to the title of a true gentleman.

The late Daniel Webster was remarkable for this; and numerous are the anecdotes related of him illustrative of the fact. Persons familiar with the routes between the seat of government and Boston, during the last thirty or forty years, can state how often the tedium of the journey has been enlivened and charmed by the genuine politeness of the great statesman. Every man cannot be a Webster; but no one is destitute of the ability to be civil and kind, whenever the disposition exists. There is a wide difference in men in regard to refinement of feeling and sensibility to the wants and claims of others; and on this will ever depend complete success in the art of being agreeable, and of ministering to the wants and comforts of fellow-beings.

This, therefore, claims your especial attention. A training in the minute particulars, which perfect and constant good manners involve, should form a part of the labors of every hour while you are in the presence of your pupils; and this to be persevered in to the close of life's toils. The mark which you will thus assist to impress on the successive classes of your school, will be ineffaceable, and continue a glorious monument to your fidelity, long after your mortal part shall have been committed to the tomb, and the undying spirit shall be transferred to the immediate presence, and be beatified by the benignant and unfading smile, of Infinite Love.

VIII. INTELLECTUAL EDUCATION.—PERCEPTIVE FACULTIES.*

Lectures Addressed to Young Teachers.

BY WILLIAM RUSSELL, LANCASTER, MASS.

[The circumstances in which the following lecture, and the others of the series were delivered, will, it is thought, account for the prominence given in them to many things merely elementary, as regards the science of mind and the philosophy of education. An audience favored with the advantages of high intellectual culture, or of long experience in instruction, would, doubtless, have required a different treatment of many topics discussed in such a course of lectures as the present. But a long series of years occupied in the training of teachers, has proved to the author of the present communication, that the greater number of candidates for the office of instruction, and of those to whom its duties are comparatively new, need nothing so much as an elementary knowledge of intellectual philosophy, and of logic, in their connection with education, as the science which teaches the appropriate development and discipline of the mind.]

The Teacher's Aim in Instruction.—Few teachers, at the present day, regard knowledge as the great end even of intellectual education. Few are now unwilling to admit that the chief aim of their daily endeavors, as instructors and educators, should be to train, develop, and discipline the powers by which knowledge is acquired, rather than to attempt the immediate accumulation of knowledge itself. In practice, however, and, more particularly, in the case of young teachers, and of those who follow the occupation as a transient one, and not as the vocation of a life-time, the eagerness for definite and apparent results, or even showy acquirements, too often induces the instructor to confine his attention to the mere mechanism of specific processes,—to the committing to memory, and the repetition of a set task, with or without the aid of explanation. This course he knows will nominally secure a single point in practice or effect. He thinks, perhaps, that, although not fully understood or appreciated now, it will certainly benefit the mind of his pupil at some future day, when his

*The series of lectures of which the present forms a part, extended to the departments of physical and moral training. But those on the progress of intellectual culture, are selected as more easily presented in the form of a series of articles for an educational Journal.

mind is more mature. Hence, we still have, in our school routine, too much of mere rule and repetition, detached fact and specific direction, the lesson of the hour and the business of the day, and too little of the searching interrogation, close observation, reflective thought, and penetrating investigation, by which alone the mind can be trained to the acquisition of useful knowledge, or the attainment of valuable truth.

Necessity of Plan and Method.—The master builder, when he goes to oversee his workmen, and watch their progress in the work of raising the edifice, for the construction of which he has entered into contract, never fails to carry with him his plan of erection, and with that in his hand, for constant reference, gives directions for even the minutest details in working. He does nothing but in execution of his plan, and in strict accordance with it. The master builder thus reads a lesson to the master instructor, (inward builder,) who, although he needs not plan in hand, for his peculiar work, needs it no less, ever present to his mind, if he wishes to become “a workman that needeth not to be ashamed;” if, in a word, he would enjoy the conscious pleasure of referring every day’s labor to its destined end of building up the mental fabric in strength, and symmetry, and enduring beauty.

The young teacher, as he reviews the business of the day with his pupils,—and would that this were a daily practice in every school!—should ever refer, in his own mind, at least, to the general effect of every exercise, as tending to the great results of education,—to the expansion of the mind, to the formation of habits of observation and inquiry, to control over attention, to the clearing and sharpening of the perceptive faculties, to the strengthening of the mind’s retentive power, to securing, in a word, intellectual tendency and character, as the basis of moral development and habit. The teacher, not less than the builder, should ever have, in his mind’s eye, the plan of his edifice; and while, during the whole process of erection, he wastes no time on fanciful theory or fantastic ornament, every operation which he conducts should be, to his own consciousness, part of a great whole, tending to a grand consummation. Text-books, processes, exercises, apparatus of every description, are properly, but the pliant tools, or the subject material, in the hands of the skillful teacher, by means of which he does his great work of “building up the building that we are;” and all these aids he arranges, selects, modifies, and applies, according to the system suggested by his plan and purpose.

As the overseer and artificer of the mental fabric of character, the

teacher who is worthy of the name, must necessarily possess a knowledge of the material on which he works. It would be well, were this knowledge always profound and philosophical; and, among the happy anticipations suggested by the establishment of normal schools, none is more cheering than the hope that, ere long, society will be furnished with a numerous class of teachers, competent to understand and guide the young mind through all its stages of growth and development, and furnished with all the requisite means of securing the noblest results of human culture.

Meanwhile, the laborers who are already in the field, and who have not enjoyed, perhaps, extensive opportunities of acquiring a scientific knowledge of the chemistry of mental culture, must be content with such aids as their own observation, reading, reflection, or experience, may furnish.

As a slight contribution to the common stock of professional facilities, the author of the present article would submit the following outline to the consideration of his fellow teachers, as an intended aid to the systematizing of their efforts for the mental advancement of their pupils.

The analysis which follows, extends, it will be perceived, no farther than to the limits of intellectual education. The physical and the moral departments of culture, may be discussed at another opportunity, and must be dismissed for the present, with the single remark, that the natural unity of the human being, demands a ceaseless attention to these, in strict conjunction with that more immediately under consideration.

PRELIMINARY ANALYSIS.—Contemplating man's intellectual constitution as subjected to the processes of education, we may conveniently group his mental powers and faculties under the following denominations:—*perceptive*, *reflective*, and *expressive*. In expression, as a function of man at the period of his maturity, the order, in the preceding classification, may be termed the normal or usual one. Man perceives, reflects, speaks. But in education, whether regarded as a natural process or an artificial one, the order of classification suggested by the experience and the history of the human being, in his early and comparatively immature condition, would present the *expressive* powers as in exercise long before the *reflective*, and, subsequently, as the appointed means of developing them, through the medium of language.

OUTLINE OF INTELLECTUAL CULTURE.—An outline map, or plan of intellectual culture, as aided by the processes of education, may be carried into practical detail, as suggested by the following prominent points of analysis.

1. Classification of the intellectual faculties, by the different *modes*, or forms of mental action.

2. Statement of the actuating principle, or impelling power of each class or group of faculties.

3. The tendency, or habit of action in each class.

4. The result, or issue of such action.

5. The educational processes adapted to each class of faculties with a view to aid its natural tendency, and secure its results.

From the imperfection of our language, in relation to topics strictly mental, or purely philosophical, the word *faculties* is unavoidably employed to represent the diversities in modes of action of the mind, which, in itself, is, properly speaking, one and indivisible. But if we keep fully before us the etymological signification of the term *faculties*, (resources, means, powers,) we shall regard it but as a figurative expression, suggestive of the indefinitely diversified states, acts, operations, processes, powers, or modes of action, attributable to the mind,—itself a unit.

Adopting the general classification before referred to, we may commence the partial filling up of our outline with

1. THE PERCEPTIVE FACULTIES.

1. Their *modes* or forms of action :

a, sensation ; *b*, perception ; *c*, attention : *d*, observation.

2. *Actuating principle*, or impelling force, *curiosity*,—or the desire of knowledge.

3. *Tendency*, or habit of action,—*observation*.

4. *Result*, or issue of action,—*knowledge*.

5. *Educational process*, forms of exercise, or modes of culture, development, and discipline suggested by the four preceding considerations,—*examination, analysis, inspection, interrogation, direction, information, comparison, classification, induction*. In other words, the appropriate *presentation of objects to the senses*, accompanied by mutual question and answer by teacher and pupil ;—with a view to quicken sensation, awaken perception, give power of prompt and sustained attention, confirm the habit of careful observation, stimulate curiosity, and insure the extensive acquisition of knowledge.

(1.) CLASSIFICATION OF THE PERCEPTIVE FACULTIES, BY THEIR MODES OF ACTION.

(*a*.) *Sensation*,—the *organic* action by which objects, facts, and relations are presented to the mind, through the media of the *senses*, and which form the conditions of perception.

(*b*.) *Perception*, or cognition,—the *intellectual* action by which the

mind *perceives*, (takes notice, or cognizance of,) data presented by the senses.

(c.) *Attention*,—the *mental* action by which, under the incitation of *desire* or *volition*, the percipient intellect *tends*, for the purposes of distinct cognizance, towards the object, fact, or relation presented to it.

(d.) *Observation*,—the *voluntary, sustained, or continuous exercise of attention*, with which the mind directs itself toward the object of its contemplation, for the purpose of complete intuition and perfect recognition.

All the terms now defined, are but different designations for the various forms in which the intuitive action of the intellectual principle is solicited by objects external to itself. The English language, as the product of mind working chiefly in practical directions, possesses little of the clearness and distinctness in nomenclature which the topics of intellectual analysis so peculiarly require. But the four terms used above are sufficient to comprise the prominent forms of perceptive action, in the various processes of intellection. They all refer significantly enough, to the first efforts of intelligence, when, previous to any introversive or reflective act, of comparatively subtle or intricate character, it obeys the instinct of its appetite, and finds its sustentation by feeding on the aliment tendered to it by its Author, in the objects which environ it. To watch and guide, and coöperate with this instructive principle, is the true office of education, as a process of nurture and developinent, working not in arbitrary or artificial, but in salutary and successful forms,—forms not devised by the fallible ingenuity of man, but by the unerring wisdom of Supreme intelligence.

Prevalent error in the order of cultivation.—Contrary, however, to the obvious suggestions of fact, education is still too generally regarded as consisting, during its earlier stages, in arbitrary exercises of memory on combinations of printed characters, abstract numbers, or even the metaphysical relations involved in the science of grammar. The excuse offered for a blind following of precedent in this direction, usually is the peculiar susceptibility of memory, during the period of childhood, and the comparative difficulty experienced in attempts to cultivate it at a later stage. Were the educational cultivation of memory directed to the retaining and treasuring up of those stores of knowledge which are naturally accessible to the mind of childhood, within the range of its daily observation, the plea would be justifiable; man's endeavors would be in harmony with the obvious instincts and endowments of the mind, and would tend to its natural expan-

sion and development. But directed to the mechanical and arbitrary results at which these endeavors so generally aim, their influence is detrimental. Their immediate effect is to quench the natural thirst for knowledge, to create a distaste for intellectual activity, and thus to defeat the best purposes of education.

The law of true culture lies in the primary craving of the young mind for material on which the understanding may operate; digesting it, in due season, into the regular form of knowledge which memory loves to retain, and which judgment ultimately builds up into the systematic arrangements of science.

(2.) CURIOSITY, THE ACTUATING PRINCIPLE OF THE PERCEPTIVE FACULTIES.

The Teacher's proper place.—The teacher who enters intelligently upon his work of cultivating the minds entrusted to his care, knows that his chief duty is to cherish the spontaneous action of their powers, and to make them intelligent and voluntary co-workers in their own development. He observes, therefore, with careful attention, the natural tendencies and action of the intellectual system, as the physiologist does those of the corporeal, so as to become competent to trace the law of development, and adapt his measures to its requirements. He thus becomes qualified to take his proper place, as an humble but efficient co-worker with the Author of the mind, recognizing and following His plan, in modes suggested by a wisdom higher than human.

The attentive study and observation of the natural workings of the mind, in the successive stages of its progress, from incipient intelligence to maturity of reason, imply, however, not merely a careful analysis of the facts and modes of mental action, but a watchful observation, with a view to detect, in all cases, the moving power or *impelling principle* of action, to aid and regulate which is the educator's chief work. The ceaseless intellectual activity of childhood, maintained through the various media of perception, furnished by the organs of sense, is obviously stimulated by the constitutional principle of *curiosity*, an eager *desire to know* and *understand*, and therefore, *to observe* and *examine*. Hence the irrepressible and searching questions with which children, in the instinct of faith, appeal to whomsoever they think can satisfy their craving for information.

To feed this mental appetite, to select and prepare its proper nutriment, to keep it in healthy and healthful activity, to quicken and strengthen it, to direct and guide it, as a divine instinct, leading to the noblest ends, should be the teacher's constant endeavor. To awaken curiosity is to secure a penetrating and fixed attention,—the

prime condition of human knowledge; and even when it leads no further than to wonder, it is preparing the advancing mind for the awe and the reverence with which, in later stages of its progress, it looks up to the knowledge which is "too high for it."

The emotion of wonder analogous to the instinct of curiosity.—Curiosity, like the kindred element of wonder, finds its sustenance in whatever is new to sensation or perception; *wonder*, in turn, leads the mind to dwell on whatever is *strange*, *intricate*, or *remote*; *astonishment*, arrests it by whatever is *sudden* and *powerful*; *awe* commands it by whatever is *vast*; and *amazement* overwhelms it by whatever is *incomprehensible* or *inscrutable*. Yet all of these effects,—even those which, for the moment, act on the perceptive intellect with a repulsive force that makes it recoil in conscious weakness from the object of contemplation,—are but various forms of stimulating, impelling, or attracting force, acting on the irrepressible vitality of the mind; and no incitements are ultimately more powerful in maintaining the most resolute and persevering activity of its powers.

Mental effects of novelty and variety.—In the great primary school of nature, as established and furnished by the Author of all, we observe, accordingly, that in the multiform variety of objects with which the young human being is surrounded, at the first dawning of intelligence within him, the novelty of the whole scene around him, and of every class of objects which it presents, is forever tempting his susceptible spirit to observe and examine, and explore, by the conscious delight which every new step affords him.

Evils of monotony, and advantages of variety.—Nor is the obvious design of the great Instructor less conspicuous in the feeling of satiety and weariness which is always superinduced by continued sameness of mental action, whether prolonged in the same mode of exercise, or on the same class of objects. The observant teacher thus learns his own lesson of duty,—to avoid undue limitation in the objects and forms of intellectual action, to shun sameness and monotony of routine, and protracted exertions of attention, as all tending to exhaust and enfeeble the mental powers. His endeavors, on the contrary, are all directed to a due diversity in the presentation of objects, and in the mode of mental activity which they call forth; and, in whatever instances frequent repetition is indispensable to exact perception, he is particularly careful to exert his ingenuity to the utmost, in devising new modes of presentation, so as to secure fresh and earnest attention to the same objects or facts, by the renovating effect of the new lights and new aspects in which he causes them to be viewed.

Faults in former modes of education.—It is unnecessary, in our day, to dwell on the obvious faults of the obsolete practice of confining young children within doors at all seasons, compelling them to remain long in one attitude or posture without relief, condemning them to long periods of silence and constraint, and forcing them to con unmeaning and irksome tasks. These injurious practices are now, for the most part renounced; and more genial and rational modes of early education are beginning to prevail. As yet, however, we have only made a beginning. We have reformed our modes of school architecture, and have allowed children the unspeakable benefits of space and air, and more frequent change of place, and posture, and exercise. Objects and pictures are now employed, to some extent, as instruments of mental culture; and the wisdom of all these changes is proved in the greater happiness and better health of our little pupils, and, more particularly, in their greater docility, and their superior intellectual progress, as contrasted with the state of things under the former *regime* of irksome monotony, restraint, weariness, and stupidity. We are very far, yet, however, from approaching the bountiful variety and delightful novelty furnished in the great model school of infancy and childhood, as established by the Divine founder.

Intellectual furniture of school-rooms.—Our primary school-rooms should be so many cabinets of nature and art. Every inch of wall not indispensably required for blackboard exercises, should be secured for educational purposes, by specimens of plants, minerals, shells, birds, and whatever else can be appropriately placed before the eye. The arranging, classifying, and describing of these, should precede any analysis or study of letters or syllables. Pictures representing such objects, should form a second stage of exercises in attention, observation, and description, before any alphabetic drilling whatever. The examination of objects and of pictures, should, in a word, form the natural preparatory training of the perceptive faculties for the more arbitrary and more difficult exercise of studying and recognizing the unmeaning, uninteresting forms of alphabetic characters with their phonetic combinations.

Injurious effects of mere alphabetic drilling.—Curiosity, the natural incitement of intellect, is easily awakened when we obey the law of the Creator, and direct it to His works,—the natural and appropriate stimulants of the perceptive powers of infancy; but when, leaving our proper sphere, and restricting our educational efforts to the mechanical training of eye and ear, we use these organs, and the informing mind, for the limited purpose of recognizing the complicated and irregular geometrical combinations of line and angle, pre-

sented in alphabetic characters, and repeating the sounds so arbitrarily associated with these, we take the mind out of its native element; we consequently force and distort its growth, dwarf its stature, and enfeeble its powers.

Effects of the salutary excitement of the feeling of wonder.—But it is not in the first stages only of mental culture, that the influence of novelty and variety is required as an incitement to observation, by the frequent presentation of new and fresh objects of attention, by the agreeable surprises occasioned by new forms and new stages of animal and vegetable life,—all tending to excite a lively curiosity, which leads, in turn, to careful attention, close examination, and successful study. Curiosity should often be awakened by the yet more powerful influence of *wonder*. Objects rare and strange, combinations intricate and even puzzling, should sometimes be called in, to excite a yet more energetic action of the perceptive intellect, in its endeavors to grasp the objects of its contemplation.

Whatever in nature is wonderful,—whether we employ the microscope, in revealing the intricate structure of plant or insect, in the minuter and closer examination of the works of the Creator; or the telescope, in the contemplation of the starry heavens, and the study of the magnitudes and motions of the bodies which people the depths of space,—all should be brought to bear on the young mind, to call forth that sense of wonder which so delights and inspires it, and prepares it, at the same time, for the influence of those sentiments of awe and reverence with which the advancing intellect learns to trace the signatures of Deity.

(3.) OBSERVATION, AS THE TENDENCY OF MENTAL HABIT, UNDER
THE INCITING INFLUENCE OF CURIOSITY.

The natural effect of intellectual instinct.—The motive power, or impelling force, by which, in the ordinations of the mind's omniscient Author, its perceptive faculties are incited to activity, and induced to render their tribute to the resources of intelligence, consists in that restless desire to observe, to examine, and to know, which constitutes man a progressively intelligent being. Impelled by this insatiable mental thirst, he is led instinctively to those streams of knowledge which constitute the waters of intellectual life. His perceptive powers thus stimulated, acquire a tendency to ceaseless activity,—a trait which forms the peculiar characteristic of the early stages of his mental progress, and which is greatly quickened by the vividness of sensation in the constitution of childhood. Hence the promptness and versatility of attention at that period, and its remarkable susceptibility to the influences of cultivation and discipline.

These aids, it is true, are, as yet, too scantily furnished in the processes of education; and, even without them, the human being, as he advances under the promptings of instinct, and the guidance of self-intelligence, attains, as in the case even of the savage, to a high degree of perceptive power. The keen, quick, and penetrating glance of his eye, the acuteness and certainty of his ear, the readiness and exactness of his observation of every object within the range of his vision, the searching closeness of inspection with which he examines everything new or uncertain, often furnish an impressive lesson on the value of training, to those whose means and opportunities of intellectual culture are so superior to his own.

Effects of cherishing the habit of observation.—The habit of observation, duly cherished in early years, by the judicious care of the parent and teacher, becomes the security for ample acquisitions in the field of knowledge, and for the daily accumulation of mental resources and of intellectual power. The observant mind, like the close-knit net of the skillful fisherman, encloses and retains the living treasures within its sweep, and deposits them, for use, in their appropriate place. The undisciplined, inattentive, unobservant spectator seizes and retains nothing in his slack and ineffectual grasp.

Suggestive significance of terms in intellectual and educational relations.—The etymology of the word *apprehension*, (seizing, grasping, laying hold of,) suggests an important lesson regarding the value of intellectual training, as dependent on the habit of attentive and close observation. The word *attention*, (tending, reaching, or stretching toward,) is not less instructive in its signification, implying the *tendency*, or the gravitating of the mind's perceptive power toward the object of notice, for the purpose of cognizance, as the first stage of intelligence. The term *observation*, (watching, with a view to obey or follow,) is yet more monitory to the teacher; as it intimates that the true study of external nature demands vigilance, docility, and fidelity; in one word, the devotion of the whole mind to the business of intellectual acquisition. *Perception*, (taking, through a medium,) refers us back to the humble office of sensation, as indispensable to the process of *taking into* the mind the treasures of knowledge offered to the grasp of sense, for the purpose of transmission to the percipient power, the inner principle of intelligence. All of these terms, in the nomenclature of mental science, tend to the same important end, in the uses of practical education: they all point to the appropriate discipline of the perceptive faculties; by means of objects addressed to the senses, as the primary stage of intellectual culture.

Educational errors.—Former modes of education rendered the use of terms such as the preceding, a nullity, or an absurdity. The child shut up within the naked walls of a school-room, seated on his uncomfortable bench, and mechanically conning by rote, the ill-fitting names of alphabetic elements, or trying to piece them into syllables, had little use of the precious gift of *sense*, but a few lines and angles to *perceive*,—unless a friendly fly should happen to alight upon the page of his primer,—no inducement to *attention* but the fear of Solomon's prescription for "minds diseased," nothing half so interesting to *observe* as the little winged being accidentally crawling on the page before him, displaying the curiously constructed mechanism of its form, its gauzy wings, and many-feathered little limbs, or stopping now and then, to dry-rub instead of washing them, and its tiny head, and flexible bit of neck, almost too diminutive to be seen. But woe to the little student of nature, in the genuine act of *observation*, if he should lift his eye from his book, and follow his brisk little visitant flying off to perform the visible miracle of walking up the perpendicular plane of the window pane, or the yet more puzzling feat of walking the ceiling with his head downward.

Rational method.—The child, in the case supposed, indicates the real want of his nature, and mutely, but most eloquently, pleads for a lesson on insect life, (entomology,) before one on the alphabet. Furnished with the data which the lesson on insect life and form, character and motion, would present to his eye, he would be receiving a rational preparatory discipline of attention and observation, in the close and careful examination of all the details of shape and configuration, exhibited in the living and attractive object before him. His recognition of figure and outline, thus secured, he would, in due season, transfer, easily and willingly, to the artificial display of them in the forms of printed characters.

Benefits resulting from the early formation of habits of attentive observation.—The early training of the perceptive faculties, by a varied and genial discipline of the power of attention, so as to render the habit of observation an unfailing characteristic of the man, becomes doubly valuable, as a result of education, when we regard its effects on the intellectual tastes and pursuits of individuals. A taste for the study of nature, early formed, leads to the practice of collecting specimens, and thus furnishing the means of successful study to the person himself, who collects them, and at the same time to all whom he is disposed to aid in such pursuits. Were even the elements of botany, geology, mineralogy, and zoölogy, generally adopted, as they ought to be, as subjects of attention in primary education,

a knowledge of natural science, would, ere long, be diffused throughout our community ; a taste for the study of nature would become an intellectual trait of our people ; the pursuit of agriculture, arboriculture, and horticulture, would be more intelligently and more advantageously followed ; the citizen would doubly relish his season of respite in the country ; taste and intelligence would extend their influence over all modes of life ; and science would be unspeakably a gainer, in its noble purposes and offices, by the multitude of active minds and busy hands called in to collect, and contribute materials for its various forms of investigation. The field of human knowledge might thus be indefinitely enlarged, and its advantages and enjoyments be more extensively diffused.

But it is not merely as a matter of scientific progress, or of taste and enjoyment, that the proper training of the perceptive faculties, by means of objects and observation, rather than by the materials furnished in books, becomes an important consideration in the planning of modes of education, and methods of instruction. Practical utility, also, has its claim to urge in this relation. The larger number of persons, even in the most advanced communities, as regards civilization and refinement, are occupied in some form of active exertion, as the daily vocation of individuals ; and while no generous mind can ever look on education as a benefit or a blessing, if it is to be used as a means of training for the occupation of a given caste, it is not less true, that every individual, in whatever class of society, would be vastly benefited by an early course of cultivation on all subjects akin to those which are to form the staple of his mode of life. Botany, geology, chemistry, entomology, for instance, all have their relations to agriculture ; and a few hours devoted weekly to the elements of these sciences, will, by their inspiring influence on the young mind, expedite rather than retard the ordinary processes of school education.

Importance of commencing early the study of Nature.—But while no formal or extensive study of these branches can be rationally attempted in primary education, it is most emphatically true, that, in the study of nature, more than in other forms of intellectual action, nothing can be advantageously done but on condition of an early beginning, and the judicious improvement of the opportunity afforded during the period of leisure and susceptibility which occurs to all human beings but once in life. Childhood and youth are, by the Creator's appointment, the period for forming taste and acquiring habits. The most resolute struggles in after years, seldom succeed in effecting a change of mental occupation, or in lending attractive inter-

est to new pursuits. The "pliant hour" must be taken for all processes of mental budding, grafting, or pruning, as well as in those of the orchard. An early dip into the study of nature, will serve to saturate the whole soul with a love for it so strong as to insure the prosecution of such subjects for life. The season is auspicious; the senses are fresh and susceptible; the mind is awake; the heart is alive; the memory is retentive; nature is yet a scene of novelty and delight; and application is a pleasure. The twig may now be bent in the direction in which the tree is to be inclined.

Universal susceptibility to instruction, drawn from Nature.—In a diversified experience of nearly forty years in the field of education, one teacher, at least, can testify that he has not yet found the mind so dull, or the heart so callous, as to resist the attractive intellectual influence of the analysis of even one plant or one mineral. The mysteries of beauty and awe which hang over such objects, as an investing celestial glory, entrancing the imagination and the heart, and all but translating the intellect itself, have a power of attraction which the dullest, coarsest, and most brutalized boy in a ragged school, cannot resist. But of the moral influence of early education, when directed to the aspects of nature, it will be more appropriate to speak in that special connection.

Effects produced on mental character, by the study of Nature.—*The solidity and the firmness of mental character*, which are acquired by the study of *things*, preceding and accompanying that of words and books, are a natural effect of the early and seasonable cultivation of the habit of observing, analyzing, comparing, and classifying, which even the slight examination of any natural object induces.—A clear, decisive, and discriminating judgment, and a retentive memory, are among the other fruits of that mental training which commences with definite objects, capable of being analyzed and reconstructed by the natural and appropriate action of the young mind, in virtue of its own powers and native tendencies. But these considerations, also belong properly to another and more advanced stage of intellectual discipline, at which *the reflective faculties*, and maturing reason, are beginning to put forth their claims for culture and development, in addition to the preparatory training which they may have received in the blended exercises of sense and intellect, in the action of the perceptive faculties.

(4.) KNOWLEDGE, THE INTELLECTUAL RESULT OF THE ACTION OF
THE PERCEPTIVE FACULTIES.

Impelled by the instinct of curiosity, and guided by the habit of observation, the young mind,—whether more or less assisted by

education,—advances to the goal designated by creative Wisdom,—*the acquisition of knowledge*, the appointed means for erecting the fabric of character on the scale outlined by the Great Architect, but left to man's industry and intelligence, for the filling up and the symmetry of detail.

The part of education which lies more immediately before us, as the object of our attention, being the cultivation of the intellect, the acquisition of knowledge becomes, in this view, a consideration of primary importance, as, at once, a source of intellectual wealth and power, and a most effective means of mental development. Knowledge, as a result of culture, is undoubtedly of inferior value to discipline. But the efforts put forth in the acquisition of genuine knowledge, are, in themselves, a disciplinary process, and the indispensable instruments of further cultivation. Yet more,—intellectual acquirements are true and durable riches,—valuable for their own sake, not merely from the resources which the accumulation of them places at the mind's command, but from their own intrinsic value, as imperishable because intellectual things, and as the successive steps of mental elevation in the scale of being. In reference to intellect, knowledge is, in one most important sense, an end, not less than a means and a measure of progress. Profound, extensive, and varied knowledge, is one of the crowning glories of man, as an intellectual and progressive being, capable of ceaseless development and acquisition. Most emphatically is this true of him, the soundness, and exactness, and completeness, of whose knowledge, are the assurance that he shall be a safe and competent guide along the path of education.

Actual knowledge.—But what is knowledge? How is it acquired?—not by the repetition of the words or the processes of others, not by the transfer from one mind to another of the verbal statements of fact or of abstract principles, not by the formation of vague and partial notions, formed on superficial data, and floating loosely in the mind, not by a half perception or half consciousness of something indefinite or supposititious, not by an assent to rash assumptions or confident assertions, not by the recollections of extensive reading, or perhaps, of attentive listening, retailed in fluent expression, not by accumulating the amplest furniture of second-hand theories and systems, whether plausible or absurd, or even logically consistent. *Knowledge is what we have experienced in our own intellect*, by means of our own observation or reflection, the fruit of personal perception, or of conscious reason, acting on the positive data of sensation. So narrowly must the term be limited, when we refer to the action

of the perceptive faculties, or to their appropriate training and discipline. Knowledge, in these relations, is *the accurate interpretation of the facts of sense*, in matters, usually, of color, form, number, weight, or sound, and the relations which these bear to one another in the processes of induction and classification. With the other sense of the term, in which it refers whether to truth or to theory, and implies the deductions of reflective *reason*, we have not, at present, to do. It belongs to a subsequent stage of the analysis of the modes of mental action, as subjected to the processes of intellectual cultivation, and occurs in connection with the discipline of the "reflective" faculties.

Literal accuracy of verbal statement, a false test of knowledge.—The acquisition of knowledge, however, is, notwithstanding all our advances, of late years, in the philosophy of education, too generally confounded with the repetition of the verbal statements of definitions, rules, and systems, as contained in books, even in relations so palpable as those of form and numbers. The test of knowledge, accordingly, with some teachers, to this day, is, even in the exact sciences, the fluency with which a definition or a rule is orally repeated, verbatim, from a text-book, and the mechanical accuracy or despatch with which a correspondent problem is solved, or a proposition demonstrated.

True knowledge experimental and personal.—True perceptive knowledge, on the other hand, or that which is actual and personal, implies, in all relations of form and number, that the individual who possesses it, has seen the object in question, or its representative, in palpable shape, in surface or in outline, that he has subjected it to actual measurement and comparison, or has an exact image of its form and configuration before his mind, that he has actually counted or grouped objects in numbers presented to the eye or to the mind, or that he has compared these with one another, and traced their relations, by strict and exact observation; and the proper office of the text-book is but to confirm and embody the result, and classify it in the exact language and systematic arrangement of formal science, as the specimens are labelled and shelved in a collector's cabinet. The use of scientific method, in the statements of text-books, is but to give logical arrangement to mental acquisitions, not to induce mere assent, whether silent or oral, and not to facilitate the mere repetition or verbal enunciation of propositions.

The proper business of the teacher, as a superintendent of mind.—The true office of the teacher is to see that the pupil is led by his own conscious experience and observation, through the process of

perception prescribed in every exercise which he attempts ; that the operation is intelligently performed at every step, and the result rendered certain, as far as the limitations of human faculties permit. By frequently repeated performance of the requisite process, the principle in question thus becomes an integral part of personal knowledge with the individual ; and his faculties receive, at the same time, a discipline which gives them facility and force in all analogous procedure in which expertness and skill are desirable attainments. In due season, also, he is able to sum up his acquirements in knowledge, in the clear and definite and precise language which science demands, and of which his text-book furnishes a perfect specimen on which he can rely.

At first, however, the young operator may need even the palpable aid of actual objects ; and the judicious teacher knows well when to give, and when to withhold such help, when to appeal to the black-board, and when to have his pupil rely on the mind's eye, during the successive stages of intellectual training. He is careful, however, not to slight or hurry over the business of the rudimental course, in which the reference to actual objects is the main reliance for a sure personal knowledge of the facts of form and number. The collateral discipline, also, arising from the attentive observation and careful study of plants, minerals, leaves, insects, and other natural objects, the intelligent teacher values highly, from the power of attention, and the habit of exact observation, which it tends to secure, by the definiteness which it gives to the action of the mind, and the certainty which it stamps on knowledge.

Contrasted examples of neglect and culture.—True education has no more striking proof of its good effect than may be observed, when the apathy and ignorance of young persons who have been allowed to neglect the observation and study of nature in childhood, and afterwards to go through a class-drill on a given branch, by means of a text-book, are contrasted with the intelligent personal interest and intimate knowledge of those who have been wisely induced to turn an early attention on the productions of nature, and thus to acquire an early love for such studies, and a life-long enjoyment of the pleasures which they afford. Adults of the former class take little interest in the "floral apostles" of the poet, who are ceaselessly preaching the perfection of their Source, or in the pebble at their feet, which, to the intelligent eye, is the medallion struck by the Creator's hand, in commemoration of one of the epochs in His reign. These eloquent monitions of a perpetual Divine presence, are, to such minds, the dead letter of a handwriting which they have not been accus-
-tom-

ed to trace, and on which their listless eye falls, as does that of the sceptic, on the page of written revelation. The mind, on the other hand, which has been early trained to an intelligent personal interest in the productions of Creative wisdom and power, enjoys a personal property, and a personal reference, in every object in nature, finds, in "the meanest flower that blows, thoughts that do often lie too deep for tears;" and ultimately to it,

"The delicate forest flower,
With fragrant breath, and look so like a smile,
Seems, as it issues from the shapeless mould,
An emanation of the indwelling Life,
A visible token of the upholding Love,
Which are the soul of this wide universe."

The definiteness and the certainty, however, which give conscious life and power to all such knowledge, depend, to a great extent, on the faithful training which the perceptive power has undergone in the nurturing stage of education. The poet whose words of truth and love convince us that he has attained to the rank of an inspired seer, set out on his career from the common starting place of infancy, in blank ignorance of every object and of every fact around him; and his brother bard whose office it is to announce, in the language of astronomy, the harmony of the spheres, and read to mankind the legislation of the heavens, had no vantage ground at his outset on those excursions which ultimately extend beyond Orion and the Pleiades. Nor was there any special dispensation antecedent to the slow but sure processes of culture, in favor of the electrician who, in the maturity of his acquirements, became competent to transmit and diffuse intelligence with the literal rapidity of lightning; and what shall we say of the barefooted mason's boy, who commences his career of "glory and of joy," plodding over the stone which he has broken with his unpracticed apprentice hammer, and, at length, reads, from that same fragment, to the delight and astonishment of mankind, the facts of an antediluvian world? All the treasures which such minds have brought from their various explorations, as tributes to the treasury of science, and to man's dominion in the sphere of knowledge, are but the varied fruits of unwearied, progressive observation, accumulating fact upon fact by the patient process of attentive examination of objects, and by the skillful exercise of well disciplined perceptive faculties. Such noble efforts of mental power we contemplate with a delight mingled with reverence and gratitude to their authors, as benefactors of the race. The worship which human ignorance, in its wondering admiration, extended, of old, to the mythic demi-god and hero, might, we think, have been pardoned had it been offered to

our venerated contemporary Humboldt, who, at an age rarely attained by modern man, withdraws, at intervals, from the onerous duties of a councilor of state, to record the acquisitions of a mind which, from early years, has been exploring the wonders of nature, and now, year after year, pours forth another and another book of the great epic of creation, to which he has so appropriately given the sublime title, "Cosmos."

The written life of this truly great man, however, only enables us to trace the progress of another watchful observer of nature, as, step by step, he observes, examines, compares, classifies, aggregates, and accumulates, till he stands before us an intellectual Atlas, upholding the sphere of human knowledge. Liberal education, favorable opportunities faithfully improved, an insatiable thirst for knowledge, and devoted application to the acquisition of it, explain the wonder. Let us inquire then, for a moment, into the processes by which human culture achieves the miracle of such results.

(5.) THE APPROPRIATE EDUCATIONAL PROCESSES FOR THE EXERCISE, DEVELOPMENT, AND DISCIPLINE, OF THE PERCEPTIVE FACULTIES.

The law of progressive intellection.—Watching the successive steps of man's intellectual development, as he advances, consciously or unconsciously, in pliancy and power of mind, we see him first incited by an irrepressible principle of *curiosity*, stimulating him to watchful attention, *close observation*, and *minute inspection*, for the purpose of acquiring a satisfactory *knowledge* of things around him; that he may, in due season, be prepared to enter upon a new and higher cycle of his ceaseless progress, and from the materials of *perception*, feed the *reflective* faculties of *judgment* and *reason*, which lead to the higher goal of *truth*, where alone the cravings of intellect can find rest and satisfaction.

Provision of educational apparatus.—The first care of the watchful and intelligent teacher, as the guide and director of the intellect, is obviously, in compliance with the law of intellectual progress, as traced above, to make liberal provision of the palpable material of *perception*, by which the instinctive appetite of curiosity is at once fed and stimulated, attention awakened, observation secured, and knowledge attained. Objects abundant in number, and varied in character, form and aspect, but chiefly those furnished by nature, and, more particularly, those which occur most frequently within the range of the child's actual observation, are the true and appropriate apparatus of his education. To the examination and inspection of these his mind naturally tends; to the process of extracting knowledge from these, his perceptive powers are expressly adapted; in such

occupation he takes delight ; working on such material, he is inspired by the consciousness of progress and of perpetually augmenting vigor ; and thus he becomes a willing and efficient, because an intelligent agent in his own development.

DISCIPLINE OF THE SENSES.—Sight ; color.—Sensation, though the humblest form of mental action, being the first in the natural order of intellectual development, suggests to the parent and teacher the great importance of a due attention to the early cultivation of the senses, especially of those whose action is so distinctly intellectual in character and result is that of *sight* and *hearing*. The proper organic training of the eye implies, what is too often overlooked, an attentive regard to *color*, as well as *form* ; the former of these being very early developed, and evidently, in all normal cases, a source of peculiar delight in infancy, not less than of high æsthetic gratification in subsequent appreciation of beauty, both in nature and art. Long before the infant shows any distinctive recognition or appreciation of form, it manifests a keen perception and intense pleasure in the observation of all objects of brilliant color.

Under the management of the judicious mother, balls of the three grand primary colors of the painter,—blue, red, and yellow,—form an inexhaustible source of pleasure to the infant eye ; while they give an unconscious exercise and discipline to the perceptive faculty, and prepare the way for the subsequent, definite, and intelligent recognition of the great lines of distinction drawn on the field of vision by the Hand which has blended color with light. Field or garden flowers, or even wayside weeds, placed within the range of the eye, serve a similar purpose. Subsequently, the principal intermediate *gradations* of color, as they occur in objects of nature or of art, in varied tints and hues, may be presented to the sight, in due succession, as a pleasing exercise for the faculties of childhood, in its progress. For this purpose, flowers, the prism, the tints and half tints of the clouds, the glow, or the hue of evening and morning skies, throughout the year ; the ever-varying colors of autumn, from their fullest flush to their gradual waning and decay ; all are admirable materials for the intellectual and æsthetic cultivation of the human being, along the successive stages of his development. The mind early trained to a sense of the beauty of color, can hardly be withheld, in after years, from the profoundest application to the study of light, as “a feast of nectared sweets, where no crude surfeit reigns.” Purity and perfection of taste in art, are another sure result of early cultivation, in this respect. How much intelligence, and how much intensity of pure and even sacred gratification, may thus be superadded to the sentiment

of reverential delight in the works of the Creator, it would be difficult for even the most skillful master of expression to say.

Form.—The early cultivation of a discriminating perception of the distinctive characters of *form*, through a carefully conducted, progressive discipline on objects submitted to the eye, is one of the most purely intellectual processes to which the mind of childhood can be subjected. The cube, the sphere, the cylinder, the cone, the pyramid, when judiciously introduced among the playthings of early childhood, as was strikingly exemplified in the schools of Pestalozzi, become unconsciously, but most surely, a basis and standard in all the relations of form; and, under the guiding suggestions of the teacher, they tend to give the mind definiteness and certainty in its action, on whatever relates to geometrical details of figure in nature, art, or mechanism. The primary truths of solid, superficial, and linear geometry, are thus imbedded in the mind, identified with its action on all visible objects, and help to constitute the observer an intelligent spectator, through life, of the grand elemental forms of the universe.

Measure.—Convenience and utility, too, have their claims to urge in favor of an early discipline of the eye on all details of *measurement*. An exact appreciation of measure, for in-door purposes, should be laid in permanent inch, and half and quarter inch marks, on the school-room wall; and to these should be added those of the foot and the yard. A mile, with its subdivision into halves, and quarters, should be measured off, as a permanent standard for the young eye, as it approaches or leaves the threshold of the school-room. The acre and the rod, and all other details of land measure, should be made familiar to the eye of boyhood, by express measurement, in the nearest accessible field or square.

Number.—Veritable ideas of number belong, also, to the early discipline of the eye, and are greatly dependent on the actual presentation of objects, for this special purpose. We read, in the accounts of one English exploring voyage, that the inhabitants of one group of islands in the Pacific, had no definite ideas of any number over five; and experienced teachers are well aware that, in the case of pupils accustomed to depend on the mere verbal memory of the words which represent numbers, and unprovided with a firm basis of actual observation of palpable objects, and the personal knowledge which such experience gives, there is an obstinate difficulty in forming definite and distinct conceptions of numbers, which resembles, too nearly, the confusion and helplessness of mind felt by those unfortunate island-

ers, in their attempts to transcend the limits of their terminal number, five.

Most of the early arithmetical operations of very young pupils, should consist in handling and counting visible objects, in enumerating marks, in grouping objects and marks, in numbers gradually progressive, from the smallest to the largest in amount; so as to secure expertness and promptness in the process of addition, in varied forms. Successive exercises should follow in multiplication, in subtraction, and division, all performed, day after day, on visible objects handled, and on marks expressly made for such purposes of training, before the purely mental processes of arithmetic are attempted on abstract numbers, even of the smallest groups. A prevalent error with teachers still continues to be that of merely exemplifying true teaching in such forms as have been mentioned, for a limited period, too limited to tell upon the habits of the mind. Long continued training alone, is inadequate to the proper purposes of discipline, certainty and skill, namely, in forming combinations which must sometimes be both extensive and complicated. It is unreasonable to expect rapidity and expertness in the processes of mental arithmetic, without the preparatory discipline which results from the actual observation of the facts of number and combination, in objects presented to the senses. Such discipline alone, can yield that personal knowledge, and that conscious grasp of mind, which give clearness and certainty to the action of the intellect in arithmetical operations.

Natural objects : animated forms.—But it is not merely the contemplation of inanimate objects which the mind, in childhood, requires as a foundation for true perception and exact observation, or as a means of securing prompt and sustained attention. The liberal training of the senses, as a primary step in intellectual cultivation, extends the study of color, form, number, and sound, to the rich domain of animated nature, in the animal as well as the vegetable kingdom, and thus brings the vivid sympathy of the young heart with kindred life and motion to the aid of the opening intellect. From the *pebble*, the *shell*, the *flower*, and the *leaf*, the judicious mother and teacher will pass to the *insect*, the *bird*, the *quadruped*, and the *fish*; and as their individualities and diversities are successively enumerated and dwelt upon, the details of color, form, and number, arrest and fix the volatile attention of the child, and win him to habits of close, minute, and exact observation.

Analysis and classification, the two great master powers for the acquisition of knowledge, in whatever direction, are also thus called in to aid the progress of the young observer in his study of nature.

The tendency of the mind to *observe, compare, examine, and classify* whatever is submitted to its action, thus early encouraged and stimulated, becomes an habitual trait of the mental character, and tells, with powerful effect, on the intellectual progress of the individual, in the more abstract relations of *language* and of *mathematics*. It is a great error to suppose that, because of the intense pleasure which attends the study of natural objects, there is not a profound and rigorous discipline of mind attending the equally intense intellectual action which accompanies the pleasure. *Analytic examination* is one and the same process, whether it is directed to the component parts of a *plant* or of a *word*. Keen and penetrating attention, close, minute, and thoughtful observation, exhaustive analysis, systematic arrangement, and methodical classification, are equally indispensable in the one case as in the other. But in giving precedence to the study of the object, and postponing that of the word, we are obeying the ordination of the Creator, who has furnished the apparatus of the first stages of human development, in the natural objects which first solicit the attention of the child, by the attractions of beauty and pleasure.

Pictorial art.—Nor is it only by means of natural objects that the sense of sight contributes to the exercise and discipline of the perceptive intellect. Art, too, renders here a rich tribute to the resources of education. Models and pictures, and the humblest attempts to produce these, as repetitions of the mental impressions received from nature, give inexpressible delight to the susceptible and imitative spirit of childhood. Their effect is invaluable, in training the perceptive faculties to the keenest, closest, long-sustained action, without the sense of weariness or fatigue; and their inspiring and refreshing influence gives vivacity and force to the whole mind. The clear perception, fixed attention, watchful observation, and active exertion, which they both require and cherish, particularly when the child is permitted to attempt to produce imitative efforts of his own, in drawing or modelling, meet so successfully the craving of the young spirit for action and endeavor, that they become powerful aids to mental development. The working hand is thus brought to the aid of the active eye, as a test, at the same time, of its correctness of vision, which is proved by the degree of truthfulness in the delineation. This productive method of exercising the perceptive and executive faculties, yields to the child the peculiar delight of having achieved something palpable, as a proof of power, and is, meanwhile, working in his mind the silent effect which is to appear, in due season, in the symmetry and gracefulness of his handwriting, and the neatness of whatever he attempts, whether in plan or execution.

The ear : music.—The varied world of sound, comprising *music* and *speech*, is another wide field of culture to the intelligent mother and the elementary teacher. The extent to which the sense of sight may be cultivated, as regards precision and certainty and truth of action, is indicated in the perfection which is attained by the sculptor and the painter, whose copies of nature are, in some instances, so faithful, and so beautifully perfect, as to confer an immortality of fame upon their authors. But little notice, comparatively, is taken of the delicate susceptibility of the *ear*, in relation to the offices of culture. Yet no sense, not even that of sight itself, is capable of attaining to so high perfection by the aids of training and discipline. The innumerable minute distinctions of sound, which the performance of even a single piece of music, by a single performer, often requires; but, still more, the multitude which the composer of one of the master-pieces of harmony must be capable of recognizing, discriminating, and combining, with a measured exactness transcending all other efforts of perceptive intellect: these remind us, most impressively, of the extent and value of cultivation, when we recall the fact, that the performer and the composer commenced their artistic training on the common footing of all human beings, a percipient mind, and an organ capable of telegraphing to it the notes of the singing bird, the song of the mother or the nurse, or the artless strains of some juvenile performer on pipe or flute.

Speech.—We have yet another proof of the susceptibility of the ear to the influences of cultivation, when “the well trod stage,” in the exhibition of a play of the ‘myriad-minded’ Shakspeare, displays in the voice of the skillful actor, the whole world of human passion, with its ever-varying tones, uttered in the language of poetic inspiration, now moulded by the serene influence of heavenly contemplation, as when Lorenzo speaks to Jessica, while they sit on the moonlit bank, of the “smallest orb which she beholds, still quiring to the young-eyed cherubim;” now breathing the deep tones of Hamlet, solemnly musing on the mysteries of life, and death, and destiny; now the hollow mutterings of conscious guilt from Macbeth, while meditating the murder from which he yet recoils; now the hoarse accents of remorse wrung from the bosom of him whose “offence is rank” with the blood of “a brother’s murder;” now the scarce articulate horror of “false, fleeting, purjured Clarence;” the maddened scream of mingling grief and rage from the injured mother, Constance; the love raptures of the empassioned Romeo; the ringing laughter of Mercutio; or the torture of Othello, as he fluctuates from

the ecstasies of overflowing love and joy, to the curses of hatred, the outbursts of grief, and the agonies of despair.

In all these forms the well trained actor, by the mastery of his artistic skill, exerts a power over the sympathies of his audience which far transcends the highest achievements of representative art in any other form. The arduous training to which the histrionic artist subjects his voice, in order to produce such effects, shows to what extent the cultivation of the ear may be carried. It is by the indications of this faithful, prompting monitor, that he guides every step of his vocal efforts, till he attains to those consummate effects of genius which, in some instances, have conferred on the individual a fame coëxtensive with the civilized world. Yet he who is, perhaps, thus renowned, commenced his early efforts, with the usual stumbling utterance of a school-boy.

Enunciation.—Passing from the higher sphere of music and poetry, in their influence on the cultivation of the intellect, through the medium of sense, we come to one of the most important stages of education, in the discipline of the voice for the useful purposes of speech, as dependent on accuracy of ear,—the only reliable guide to correct results. The unconscious freedom with which we utter thoughts in our native tongue, leaves all persons who are not advantageously trained by precept or example, exposed to the evils of incorrect habit, in utterance. The extensive prevalence, also, of corrupted usage, in the negligent practice of general society, increases the liability to error in the style of the individual. There was wisdom in the Roman maxim, that the nurses of children ought to be persons of correct habit, in enunciation. The influence of early example, is the most binding rule of speech, as the baffled and disappointed teacher, after all his endeavors, is often made to feel.

One early begun and long continued daily practice, in primary training, should consist in the careful, correct, and distinct *articulation* of the component elements of speech, as accomplished in our own language. These should, at first, be practiced with reference to *the exact sound of every letter of the alphabet*, singly and separately; afterwards they should be enunciated in the groups which constitute *syllables*, on a graduated progressive scale of difficulty, till every variety of combination can be uttered with perfect distinctness and perfect fluency; finally, *the pronunciation of words* should be practiced in a similar manner, till the style of the young learner is freed from all corrupt and local mannerism, and he is prepared to take his place among the cultivated in speech as well as thought, and, by his personal manner of expression, to evince the style of educated habit as preferable to that of vulgar negligence.

Elocution.—In the secondary and in the more advanced stages of education, the discipline of the ear should be extended, so as to embrace all the refining and highly intellectual influences of music and poetry, as combined in *elocution*.

Intellect, feeling, and imagination, are all inseparably united in the appropriate expression of sentiment, as embodied in the language of *oratory* and *poetry*; and their finest effects in utterance depend on a nice susceptibility of ear, which culture only can secure to full extent. Music and elocution, the most humanizing of all arts, prescribe the apparatus and the forms of training to which the ear should be subjected, through the whole course of education. In the analysis and the discrimination which vocal discipline demands, in the recognition which it secures of the almost infinitely diversified and ever varying character of tones, in their expression of intelligence or of emotion, there is an admirable discipline of intellect implied, which, though less formally displayed than in other modes of exercise, is not, on that account, the less effectual. Of the high *moral* value of the susceptibility which such training tends to cherish, it is not now the appropriate time to speak. We may advert to it under a subsequent head.

The subject of *healthful physical training* is not now under consideration; yet sensation, and consequent perception, are dependent on the condition of the organs of sense, and therefore of the whole corporeal frame, which must be in a healthy condition to secure the natural and true action of nerve and brain,—the apparatus of perceptive action in the intellect. The attentive and efficient cultivation of health should be regarded, not merely as a condition of intellectual life, but as the first step in the formation of intellectual character. The clear eye and the quick ear of health are highly intellectual in their tendencies, and are for ever detecting and offering material for the intellect to examine or explore. The dull organs of a morbid frame, on the contrary, are too torpid to respond to the awakening touch or beckoning invitation of nature, and leave the clouded intellect to sleep or to dream.

PROGRESSIVE CHARACTER OF THE PROPER DISCIPLINE OF THE PERCEPTIVE FACULTIES.

The varied exercises of eye and ear, as organs of sentient mind, should always, under the guiding management of the teacher, advance in intellectual character from stage to stage, so as to secure the benefits of a progressive discipline, commencing, indeed, at the threshold of sense, but ever tending more and more inward, till they become nearly inseparable from the action and character of pure intellect. They thus render the keen eye and the quick ear prompters to

clear perception, fixed attention, penetrating observation, careful comparison, and discriminating judgment, and so conduct to consummate intelligence.

The teacher who works in intelligent coöperation with the constitution of the beings whose character it is his office to mould, is content to labor patiently in the field of *sensation*, as, at first, forming the sole ground on which he can rationally meet the dawning mind, with the hope to exert a genial and effectual influence on its development. He dwells long, accordingly, on the prominent outward characteristics of objects, as most accessible to the unpracticed faculties of infancy, as best adapted to elicit their activity, and tempt them forth to more and more energetic effort. He furnishes, with no sparing hand, the opportunities of intuition, in the abundance and variety of the objects which he presents to the senses. He selects these, however, with such judgment and skill that the young mind shall be incapable of regarding them with a mere vacant aspersion or listless intuition, but, on the contrary, shall be made to feel that there is within them a soliciting power, a magnetic attraction, to which its own nature responds, and by which it is led on, from stage to stage, till it finds itself in possession of the mental treasures of clear perception and definite knowledge.

VOLUNTARY EXERCISE OF THE PERCEPTIVE FACULTIES, A CONDITION OF INTELLECTUAL DEVELOPMENT.

Attention as a voluntary act.—The teacher who recognizes the law of intellectual growth, is aware that, in adopting measures to aid the progressive unfolding of the perceptive faculties, he may trust largely to the mind's own instinctive and spontaneous tendencies to action, if only due provision is made for mental activity, by supplying the objects of sense which naturally invite and stimulate perception. But regarding the mind as a voluntary and self-directing agent, he knows that unless its own efficient coöperation is secured in the processes on which its energies are exerted, its activity will be ever tending to subside, or to degenerate into mechanical and unmeaning routine. The result, he is aware, must, in such circumstances, be a morbid intellectual inertness of habit, or a deceptive show of forced organic action, instead of the movements of mental life. His great endeavor, therefore, will be to succeed in evoking ATTENTION,—that power of the mind which brings into vigorous and efficient activity the percipient intellect,—that power which, by its own innate force, impels and sustains perception, in whatever direction it is called to act, or in whatever process it is employed.

The customary definition of this power, or faculty, as *voluntary per-*

ception, suggests to the educator his true office in cultivating and developing it. It implies that he no longer restricts his efforts to presenting such objects as solicit and secure the mind's notice, by the law of natural instinct, but that, addressing himself to the principle of *volition*, he calls it forth, as a moving force, impelling the mental machinery from within, and enabling it to arrive at knowledge, by its own action. The true teacher never commits the error of resorting to the exercise of his own will, instead of that of his pupil, as the propelling power. He is aware that his success, as an educator, is to be measured, not by the force with which he can bring his own power of compulsion to bear on the faculties of his pupils, but by the intensity with which he can bring their mental energies into voluntary play, in processes which leave a *residuum* of living force, as a result on mental character. He knows well that no degree of exertion can command attention, by a mere act of will, at the moment; that, by the law of the mental constitution, a train of circumstances must be laid before the desired result can be ensured; that an exercise of will is not, in the natural analogies of mental action, a merely arbitrary act of self-determination; but that, on the contrary, *will* is solicited by *desire*; a feeling or affection of the mind being the natural and necessary preliminary to volition; and that the intelligent guide of the intellectual powers must, therefore, appeal to *feeling*, as the natural and reliable prompter of the will. In other words, the educational process, rightly conducted, is so contrived as to create a desire to arrive at the given result, and proceeds upon that security for the action of will in determining the direction of the mind, and sustaining the exertion of its powers.

Trained under such influences, a disciplined attention is the sure fruit of culture; and power of attention is not unjustly termed the key which unlocks all the gates of knowledge, and secures an entrance to its innermost secrets of intelligence.

Attention, as a power or mode of intellectual action, regarded in connection with the cultivation of the perceptive faculties, requires the application of the various expedients by which it may be rendered *prompt*, *earnest*, *close*, and *continuous*, as the exigencies of subjects and of the mind may demand.

Promptness of attention.—Such results imply that the educator, as a skillful gymnasiarch in the arena of mind, trains it through every variety of evolution by which it may be rendered *quick* in movement, ever ready for instantaneous action, so as to secure that pliancy and versatility by which it can at once direct itself to its object, or relinquish one object or train of thought for another, when

the moment for change has arrived, and pursue the object of its aim with whatever velocity of motion may be requisite to reach it, in due season.

Speed and despatch, however, not haste and hurry, should be the ends at which the teacher aims in all drilling processes. A wakeful and lively attention, ever on the alert for action, implies sound and healthful and invigorating training. A harassed and exhausted mind, dragged or driven along the path of exercise too arduous, or too long continued, can never yield the results of genuine discipline.

With very young pupils, especially, the obvious indication of nature is, make free use of *striking* and *attractive* objects, illustrations, and remarks. One object at a time; words few and well chosen; no lagging or drawling on the part of either pupil or teacher, yet no hurry, no impatience, no impetuosity; proceeding smoothly and swiftly, but quietly and gently in all movements; yet sometimes, for the purpose of arresting attention, adopting the grateful surprise of a sudden change, briskly executed:—these are the characteristics of skillful and genial training, such as quickens the life power of intellect.

Earnestness of attention.—The power of *earnest* attention is another trait of mental habit to which the successful teacher directs his endeavors, as an invaluable attainment to be secured, through his agency, by his pupils. To this end, he avoids carefully all exercises not interesting or inviting to the young mind. *Objects, pictures, penetrating questions, vigorous exertion*, in varied forms, for mind and body,—strenuous endeavor called forth, at intervals, to cope with *difficulties, interesting facts* stated, or stories told,—the wonders of nature and of art exhibited, interesting *conversation* maintained, in which the pupils interchange thoughts with the teacher, *word-pictures* of peculiar power and beauty, selected from the poets, early attempts at *drawing*, exercises in *planning* and *building*, tangible illustrations in architecture, masonry, carpentry, or joiner-work, in juvenile style, for hours of recreation, the *analysis of plants*, the tracing of the *anatomy* of animal forms, in specimens of *insect* organization, in the osseous construction of *birds, fishes, reptiles, &c.*; all lessons made, as far as practicable, matter of *active work*, rather than merely passive attention; the ceaseless use of the *slate*, the *pencil*, and the *blackboard*, in recording, repeating, and illustrating every thing which admits of such forms of expression; these, and every other resort which ingenuity can invent, are all required in the exigencies of *actual teaching*.

Earnest attention and strenuous application, on the part of pupils, are the natural result and unfailing reward of the teacher's own facility and skill in devising and executing inspiring models of whatever

he would have his pupils execute. The efficacy of his own ear, eye, and hand, secured by his own self-culture, is the only guaranty of his success, as a faithful trainer of the perceptive faculties. The general introduction of music and drawing, now in progress in all well-taught schools, together with the increasing attention given to elementary lessons in botany and mineralogy, is opening a highly beneficial course of discipline for the young mind, in whatever concerns the power of earnest and effective attention, as an attribute of intellectual character.

Closeness of attention.—The thorough discipline of attention, however, as the directing force of the perceptive faculties, implies that it is not only rendered prompt and earnest in action, but *close* and *minute* in its application. A faithful *analysis* is conditioned, in all departments of study, on a clear and distinct perception of *every particular*. Nothing must be suffered to escape notice. No analysis can be complete that is not exhaustive, to the extent of its object. Close and minute inspection is indispensable for the exact observation of many of the most instructive and the most beautiful of the details of nature, in the forms of animal and vegetable life,—for the successful watching of the processes of chemistry,—for forming exact estimations of quantity and number,—for tracing the diversities of even inanimate form, the delicate gradations of color, the minutest difference of sound and form, in the details of language, together with all the nicer distinctions, and discriminations of thought, when embodied in words, for the purposes of communication.

To secure these results, we are again directed to the early and effectual training of the perceptive faculties on the objects of nature, as the first step in the true education of the mind. The minutest point of form in the structure of leaf or blossom, the child traces with delight; and this native tendency of mental action, extended in its range of objects, and confirmed by the law of habit, becomes not only a source of intellectual enjoyment, but of conscious power and ultimate success, in all investigations, not merely of nature and external objects, but, by the inevitable law of analogy, in every department of research on which the intellect is competent to enter. The power of close attention, sharpened by judicious early training of the perceptive faculties, attains in due season, to consummate certainty and success in those processes of minute analysis which are, in many instances, the crowning glories of science.

No contrast can be more striking than that exhibited in the two cases of neglect and culture, in this relation of mental action. On the one hand, we have the loose, superficial, imperfect attention, which

glides listlessly over the surface of things, without note, and consequently without knowledge ; on the other we see an acute, keen, penetrating, searching inspection, which nothing escapes,—a mind whose knowledge is exact and complete, whose information is the result of narrowly examined and well ascertained particulars.

The intelligent teacher, knowing that the keenest exercises of discriminating judgment are, by the law of mental constitution and habit, not unfrequently dependent on the close examination of details, on the power of tracing and detecting the minutest shades of difference in objects and their component parts, leads his pupils, by the closeness of his questioning, to follow the minutest ramifications of diversity, amid apparent similarity, in the objects which he uses as instruments for sharpening their perceptions to the keenest inspection of every feature which is accessible to the discernment of sense. Beyond this point he passes to the use of the microscope, one of the most valuable implements ever devised as an aid to the processes of human culture. A cheap instrument of this description, in the hands of an attentive teacher, has a power which no degree of mental inertia can resist. It has been known to convert, in a few days, a whole school of uncultivated, thoughtless, turbulent children into an attentive, thoughtful, inquiring, docile, and orderly company of little students of nature.

A few minutes occupied daily in observing and tracing the forms of objects, in detail, is, in addition to its ultimate effects on mental habit, of the greatest service in the humble relations of alphabetic teaching. A ground work is thus laid for the accurate recognition of the elements of form combined in the visible shapes of printed and written characters, and a surer and more rapid, because a more intelligent, progress secured, as regards the accuracy of the eye in recognizing, or of the hand in repeating the lines, angles, and curves, which constitute the complex forms of letters. Accustomed to the close and minute analysis of form on visible objects of different sorts, the child, if permitted to treat his alphabetic characters in a similar way, takes delight in detecting and naming their constituent parts ; and, particularly, when he is permitted to try to delineate them for himself, and thus, as it were, bring them under a kind of ideal subjection to his power.

The discipline of particular observation and searching attention, early secured, becomes, in due season, a complete guaranty for the correct and successful performance of the various gradations of mathematical problems in which a well trained and exact attention is required, whether for the relations of form or those of numbers ; and throughout the successive stages of education, in all its departments.

The well trained mind becomes ultimately like the thoroughly magnetized instrument, which leaves no stray particles of the steel-filings scattered abroad, but agglomerates them every one to itself; with a certainty which renders the act no unfitting analogy for illustrating the universal law of gravitation.

Tenacity of attention.—Having used his best endeavors to render the faculty of attention prompt, earnest, and close, in its action, as the guide of the perceptive faculties, the teacher has yet another character to stamp upon it. He would have it not only quick and vivid, and searching, but *tenacious* and *persistent*. From an element volatile, fluctuating, and superficial, in its first manifestations, he would have it become, at length, a power fixed, and steadfast, and unfailing. Patiently training it through its incipient stage of short, feeble flights, he inures it to lengthened excursions and sustained exertions, such as all valuable mental attainments demand. Here, again, Nature comes to his aid, furnishing him liberally not only with numerous instruments of discipline in her manifold forms, as objects, individually, attractive and interesting, but with those *complexities* of shape, and color, and number, those *organic relations*, and *organic contrivances*, those *compound bodies*, those *intricate combinations of elements and processes*, which all require not only an earnest and close, but a long-sustained, unflagging attention, as the only condition of faithful and exact observation and accurate knowledge.

The intelligent teacher watches carefully the progressive development of his pupil's power of attention, and exercises it according to the increasing force and firmness of its grasp, so as to secure a perpetually *growing power of retention*, through all the successive exercises which he contrives for its discipline, on *natural and artificial forms*, their various *combinations, numbers, powers, and characteristics*, of whatever denomination in the vocabularies of science and art.

Regarding attention as the master power in the grasp of the perceptive faculties, he values, most of all, its strength and retentiveness, its ability to maintain an unbroken sequence of activity, such as not unfrequently demands the incitement of the most earnest desire to arrive at the wished for result, and produce, in turn, the most resolute determination of the will to persevere in action till the result is mastered.

Here, again, the teacher finds his best resort in the objects and processes of nature; unwearied attention is in no way so effectually secured, without undue or fatiguing exertion, as in analyzing and inspecting the various *parts* of *plants*, or the *anatomical mechanism* of animal forms, and, more particularly, of insects. While no humane or enlightened teacher would ever propose even one half hour of

unbroken attention, on the part of very young pupils, twice that time may safely and advantageously pass in the suggestive questions of the teacher, and the ready answers of the pupils, during the examination of a single specimen of the productions of nature. In such circumstances, instruction takes its best form,—that of interesting *conversation*; and time flies only too fast for both parties in the exercise. Another sustained effort of attention may, by a judicious change in the form of mental action, be as easily secured by permitting the pupil to make such attempt as he can at *delineating*, in detail, the parts of the object which he has been contemplating; still another may be obtained by permitting him to describe in *words*, and at full length, what he has observed; and even the giant Despair of “composition” may be conquered by allowing the pupil to write his description.

Such processes prepare the young student in due season, for those arduous and unflagging exertions of attention by which he ultimately succeeds in solving lengthened and complicated problems in mathematics, disentangling long and inverted sentences by tracing the grammatical relations of their parts, and following, with patient assiduity, every step in extended and abstruse processes of reasoning on subjects more purely mental in their character.

(To be continued.)

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IX. ORIGIN OF THE TREATMENT AND TRAINING OF IDIOTS.

BY EDWARD SEGUIN.

NONE but God can do anything of himself alone. Hence, the question of priority in human discovery is always contested. If the truthful history of any invention were written, we should find concerned in it the thinker, who dreams, without reaching the means of putting his imaginings in practice; the mathematician, who estimates justly the forces at command, in their relation to each other, but who forgets to proportion them to the resistance to be encountered; and, so on, through the thousand intermediates between the dream and the perfect idea, till one comes who combines the result of the labors of all his predecessors, and gives to the invention new life, and with it his name.

But, in good faith, this man is but the expression,—honorable and often honored,—of human fraternity. And, it is only from this point of view that the full benefit of the discovery is seen: being the common property of mankind, it gives us wider and deeper feelings of mutual dependence or solidarity. A short notice of the origin of the treatment and training of the unfortunate idiots will be an illustration of this law of mutual dependence.

In the year 1801, the citizen M. Bonnaterre discovered, in the forest of Aveyron, France, a wild boy. This naked boy was marked with numerous scars; he was nimble as a deer, subsisting on roots and nuts, which he cracked like a monkey, laughing at the falling snow, and rolling himself with delight in this white blanket. He seemed to be about 17 years of age. Bonnaterre permitted this wild boy to escape, but afterwards retook him and sent him, at his own expense, to the abbé Sicard, director of the Asylum for the Deaf and Dumb, at Paris.

Sicard had just succeeded the illustrious abbé L'Epée; and, Bonnaterre thought him to be the most suitable man to perform the miracle of which he dreamed,—the education of this creature, the most inferior that had ever been seen under the form of humanity; but, he was mistaken. Sicard exhibited, for some days, to the learned and curious, the being, who was constantly throwing away his clothes and endeavoring to escape, even by the windows, and then left him to wander, neglected, under the immense roofs of the school for deaf mutes.

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But, the wild boy of Aveyron had been seen by all Paris. If the crowd of visitors had found him a subject of disgust, he excited in the mind of the thinkers and philosophers a livelier interest. Some of those who had held conversation with Franklin on the liberty of the world, were still living, and by them the subject was brought before the Academy of Sciences, where it produced interesting and fruitful discussions.

Two men were particularly conspicuous for their interest in the wild boy of Aveyron, viz.: Pinel, physician-in-chief for the insane, author of the *Nosographie Philosophique*, who declared the child *idiotic*,—the sequel proved him correct; and Itard, physician-in-chief of the deaf and dumb, who asserted that the subject was simply *entirely untaught*. Itard did more; he named him VICTOR, doubtless as a sign of the victory which education should achieve in him over brute nature. But, he did more yet; he received him into his own house, employed a governess for him, and devoted to him a portion of his time, otherwise so fully occupied, for six years.

This devotion of Itard to this child and to science, is the more worthy of praise as, based upon a metaphysical error, his efforts were constantly met by disappointment; and yet, he never yielded to the feelings of discouragement. His errors were these: He obstinately saw in the *idiot* the savage; and, resting in his studies, as well as in his faith, on the materialistic doctrines of Locke and Condillac, his teachings sometimes reached the senses of his pupil, but never penetrated to his mind and soul. He gave to his senses certain notions of things, he even excited in him a physical sensibility to the caresses bestowed upon him; but, he left him destitute of ideas and of social or moral feelings, incapable of labor, and, consequently, of independence. He was, in the end of that painful and fruitless trial, immured in a hospital, where he passed the remainder of his life.

But, if these six years were almost lost to the wild boy of Aveyron, they bore their fruit in the mind of Itard. Although closely occupied in his investigations of the diseases of the ear, he often thought of the experiment of his youth, and sometimes he regretted the renown which attached itself to his name as a surgeon,—a renown that sent him patients from all parts of Europe, but left him no leisure for his philanthropic study and experiment.

It was in this state of mind that Itard, in 1837, was consulted by the celebrated Guersant, principal of the children's hospital of Paris, in the case of a young idiot. "If I was younger," cried Itard, "I would charge myself with his care; but, send me a suitable man, and

I will direct his efforts." Guersant spoke to him of myself. Itard was a fellow student in medicine of my father. "If Seguin will accept," Itard did me the honor of saying, "I will answer for the result." From this sketch, it will be seen that three men took the lead in the grand enterprise of the amelioration of the condition of idiots: Bonnaterre, the generous and enthusiastic protector of the boy of Aveyron; Pinel, whose discriminating diagnosis has so much illumined the subject of idiocy; and, Itard, whose devotion, patience, and sagacity opened up the method of amelioration.

When Guersant offered me the perilous honor of continuing the unfinished labor of Itard, I was just recovering from an illness, thought at one time to be mortal. However, the desire of sending my name to the ears of one whom I expected never to see again, gave me strength to attempt the enterprise. Itard communicated to me the details of what he had done with his first pupils, and I studied all that had been attempted or performed after him.

Gall, giving a strong impulse to the investigation of the functions of the brain, had called up the question of the cause of idiocy: a skillful theorist, he thought he had discovered in idiots proofs of the truth of his system of phrenology. The authors who succeeded him, Georget, Esquirol, Lelut, Foville, Calmeil, Leuret, Pritchard, seem, on the contrary, to have studied idiocy only to use its phenomena for the destruction of the system of Gall, but not for the benefit of the poor idiots, whom they declared incurable. With their single polemical object in view, they spent thirty years in measuring and weighing the heads of living and dead idiots, and they arrived at the following conclusions:—

1. No constant relation exists between the general development of the cranium and the degree of intelligence.
2. The dimensions of the anterior part of the cranium, and especially of the forehead, are, at least, as great among idiots as among others.
3. Three-fifths of idiots have larger heads than men of ordinary intelligence.
4. There is no constant relation between the degree of intelligence and the weight of the brain.
5. The different degrees of idiocy are not measurable by the weight of the brain.
6. A cranium, perfectly formed, often encloses a brain imperfectly formed, irregular, &c.
7. Sometimes the brain of idiots presents no deviation in form, color, and density from the normal standard; it is, in fact, perfectly normal.

All these anatomo-psychological facts they professed to have established;* but, of the education and treatment of idiots, not a new word was uttered during thirty-five years. At the end of that time my first labors were performed in the studio of Itard, where he bestowed on me the most valuable gift an old man can offer to a young one,—the practical result of his experience.

Itard was often sublime during these interviews, when a prey to horrible sufferings, symptoms of his fatal malady, he discussed with me the highest questions. His features would contract, and his body writhe in his anguish, but his mind never lost his clearness and precision for a moment. I there learned the secret of his influence over the idiots, as I did that of his weakness in philosophy, till the time when he died at Passy, in 1838.

The desire of knowing if *mental medicine* had no better remedies than his writings, for my first patients, induced me to conduct them to Esquirol, to whom we went every week. Esquirol, the oracle of the mental medicine, had nothing to teach me; but, he was a man of exquisite tact, and he gave me most excellent counsels upon the application of the processes which I suggested to him. His approbation encouraged me in my efforts, while I was maturing in my mind the theory which he never knew.

This theory, my only superiority over my predecessors, is no more separated from the men of our times, than were my early experiments from the men of the preceding generation.

The “new Christianity,” by St. Simon, the oral and written lessons of his now lamented disciple, Olinde Rodrigue; the “philosophy of history,” by president Buchez; the “encyclopædic review,” by Carnot and Charton; the “popular encyclopædia” of Pierre Leroux and Jean Reynaud,—my familiarity with all these, except the first,—such are the living springs whence I drew the elements of my initiation to the mysteries of the laws of philosophical medicine.

The bases of these laws are these: unity of God, manifested in his three principal attributes; unity of man in his three manifestations of being; the idiot, like other men, a likeness of God, infirm in the modes of expression of his trinity. 1st. Infirm in his mobility and sensibility. 2d. Infirm in his perception and his reasoning. 3d. Infirm in his affections and will. One and triple infirmity, reparable in the individual, as it was in the human race, for the idiot by a proper training, for mankind under the sweet, but terrible lessons which history records.

* See compendium of practical medicine, by Monneret et Fleury.

Is it not worthy of the spirit of the nineteenth century, thus to make the idiot,—this creature which, up to the present time, has been looked upon with disgust,—serve to enlighten the science of anthropology, to prove that the true theory of man's nature is derived from a better knowledge of the Divinity, and thus to withdraw one of those veils spread between us and our Creator, called mysteries now, but which the future generations will recognize as truths.

But, it is not sufficient to have discovered the true philosophical principle; it is necessary to apply it. In this application, pure practical work, tested only by experience and comparison, all that was not historically and chronologically in its place, was recognized as false, useless, and impossible. After such an elimination of every arbitrary means of instruction and progress, the treatment of the idiot then followed the same march which the education of the human race had been pursuing during the lapse of ages. So, the first necessity of a people and of an individual, is that of an active and sensitive force, by which man is enabled to go, act, combat, and triumph. This necessity caused, for the primitive races, the introduction of athletic sports and exercises; traces of which we find even on the monuments of Thebes and Luxor. Upon these gymnastics of the primitive peoples, was founded the first steps in the education of idiots.

For those individuals who are destitute of spontaneous action, imitation was found one of the most powerful means of progress. The excitation of the imitative powers ought, then, to hold a prominent place in all the treatment, physiological, psychological, and moral. The sequel of this observation was as follows. In the physiological order, imitation, applied to gestures and gymnastics, gives to idiots attention and aptitude of the body; while, imitation, transferred from unmeaning gestures to those gestures that have a private or social object, prompt to voluntary, regular action, which can produce *work* at any time, however it may be, simple or complex; the ability to labor is thus conquered.

It is one of the characteristics of idiocy, that it is constantly represented, in an individual, by one or more than one anomalies, in the functions of the senses, viz.: deprivation, imperfection, dullness, or exaltation. These sensorial symptoms of idiocy, so variable in their manifestations, since they affect sometimes the touch, sometimes the taste, sometimes the sense of smell, sometimes the ear, and oftener still the sight, served so well to corroborate the doctrines of the materialists of the 18th century, that Itard considered them all as constituting idiocy. In consequence, his treatment was wholly directed to the aim of repairing the disorder of the senses. The dogma of the

19th century teaches us, on the contrary, that the senses are not the mind, far less the soul; that the sensorial development is produced in the race, as it comes out in the individual, immediately after the muscular development; and that, these being accomplished, the mind and soul, the intellectual and the moral principle remain untouched. Immense revelation! since that which was regarded by the materialists as the end, is nothing more than the end of the first phase of the human trinity, and, in consequence, as the prolegomena of the treatment of idiots.

Thus it appears that the men who have given the formulas for the treatment of idiots are no less than the leading minds of the 19th century, they are those men who have rescued the science of anthropology, taking it up at the point where the *Bible* leaves it, making man, says the *Book*, "in our image after our likeness."

The senses, being in man, the doors through which the mind issues and enters, we have treated them in idiots, as in the material world, entrances oblique, too narrow, or defective in any way are treated, i. e., we have straightened or enlarged them. We have also profited, by these openings, to introduce, besides the material notions of the physical properties of bodies, a few simple ideas relating to simple and useful, or agreeable objects. These first ideas have embraced two classes of phenomena.—1st, the class of the *wants*, which attaches an idea of usefulness to each object; a class of unlimited extent, which gradually leads a man from the want of an artificial sole for his foot, to the research of some propulsive agency swifter than steam. 2d, the class of *wonders*, which offers pleasure and discovery, food to the fancy, to every one, to the savage as well as to the civilized, to the idiot as well as to the sage. Michael Montaigne calls curiosity, "that charming fury which urges us all to the incessant search after some *new* novelty." Idiots do not seem to possess that natural curiosity,—mother of the beautiful and of all progress—but the teacher can excite it in him.

In order to accomplish this, the idiot should receive a course of treatment similar to that which developed the primitive nations. The glorious effulgence of the light, the gloomy shadows of the darkness, the striking contrasts of colors, the infinite variety of form, the smoothness or hardness of substances, the sounds and the pauses of music, the eloquent harmonies of human gesture, look and speech, these are the powerful agents of their transition from physiological to mental education.

Away, then, with books! Give us the Assyrian and Jewish mode of instruction. The representative signs of thought where painted,

engraved, sculptured in deepness or in relief, sensible to the eye and to the touch ; the tables of the mosaic laws appear in the midst of thunder and of the lightning's flash ; in the same way, the symbols, under which is concealed the modern mind, should appear to the idiot, under these historic and powerful forms, so that seeing and feeling all at once, he will understand.

In most cases, speech does not exist among idiots. To teach them to speak, it is necessary to bear in mind,—1st, that the primitive languages are monosyllabic ; 2d, that they have a rhythm like music ; 3d, that they represent first the wants heightened to the pitch of the acutest feelings. When the idiot can speak, read, or count, to some extent, he has acquired the instruments, by the aid of which the education of the mind, already begun, is possible. Let us go on, then, in this second period of the teaching, till the heavens and earth fail to furnish us with the means of progress. The intelligence of every man has its limits ; that of the mind of the idiot will be more restricted. In the foregoing task, there has been a period to teach the idiot to walk, to hold himself erect, to grasp with the hands, to carry, to act, to look, to hear, to speak, to read, and all these follow each other without confusion, like points of different perspective in a landscape ; but one principle has accompanied and controlled all these successive steps—the principle of *moral training*.

That which most essentially constitutes idiocy, is the absence of *moral volition*, superseded by a *negative will* ; that in which the treatment of an idiot essentially consist is, in changing his *negative will* into an affirmative one, his *will* of loneliness into a will of sociability and usefulness ; such is the object of the *moral training*.

The idiot wishes for nothing, he wishes only to remain in his vacuity. To treat successfully this ill will, the physician wills that the idiot should act, and think himself, of himself, and finally by himself. The incessant volition of the moral physician urges incessantly the idiot out of his idiocy into the sphere of activity, of thinking, of labor, of duty and of affectionate feelings ; such is the moral treatment. The negative will of the idiot being overcome, scope and encouragement being given to his first indications of active volition, the immoral tendencies of this new power being repressed, his mixing with the busy and living world is to be urged on at every opportunity. This moral part of the training is not something separate, but is the necessary attendant and super-addition upon all the other parts of the training, whether we teach him to read, whether we play with him the childish game, let our will govern his, if we will enough for himself, he shall become willing too.

The importance of this, the *moral treatment*, has led to inquire into its origin. Long before the physician had conceived the plan of correcting the false ideas and feelings of a lunatic by purgatives, or the cranial depressions of an idiot by bleeding, Spain had produced several generations of monks, who treated, with the greatest success, all kinds of mental diseases, without drugs, by moral training alone. Certain regular labors, the performance of simple and assiduous duties, an enlightened and sovereign volition, watching constantly over the patients—such were the only remedies employed. “We cure almost all of our lunatics,” said the good fathers, “except the nobles, who would think themselves dishonored by working with their hands.” Last and fatal word of an expiring aristocracy,—“Idleness or death,” cried she, even in her insanity, and soon the people answered, “Die, then, for those alone who labor have a right to Life and Liberty.”

Is it not a strange thing to contemplate!—These men, withdrawn from the world and from human science, without other knowledge than that of the Christian charity,—but in the fullness of their only and holy duty, giving to the insane, calmness in the place of fury, attention in the place of dementia, useful labor in the place of impulse to destruction; thus, in fact, driving out the demons from these wandering souls. They knew nothing, these poor monks who said to their patients—“In the name of God the creator and orderer, control thy actions.—In the name of God, the great thinker of the universe, control thy thoughts.—In the name of God, the great lover, control thy passions.” These poor monks knew only to act in virtue of their faith, and we—who have with the sublime but blind faith, the reason for its exercise, we do no better than they did, only we know *why* and *how* we do it, when we apply their treatment to the idiot.

Thus, thanks to the idiots, that which was, in the hands of the monks of Spain, a divine mystery, is become a fundamental principle of anthropological science. Such is the origin, partly divine and partly human, of the treatment and education of idiots, though we can clearly see that God is at the bottom of this and of all our great discoveries.

X. MORAL AND RELIGIOUS INSTRUCTION IN PUBLIC SCHOOLS.

REMARKS* on the Address of the retiring President, being in order, PROF. CHARLES DAVIES, offered the following resolution:

Resolved, That the sentiments expressed by our late President, PROF. BACHE, in his recent address, that moral and religious instruction should form a prominent element in all our systems of public education, is in accordance with the firm belief and earnest convictions of this Association.

PROF. DAVIES, addressed the Convention at some length in support of this resolution. He spoke in terms of warm commendation of the stand taken by Prof. Bache, and Prof. Pierce, upon the subject of moral and religious instruction in the schools, and desired that the Association should be understood by the public to endorse the sentiment so ably expressed by them.

HON. S. S. RANDALL, seconded the resolution, and urged its adoption. He thought it to be necessary in order that the public should know that the Association were not, as it had been sometimes feared, in favor of excluding the religious element from our systems of education.

REV. GORHAM D. ABBOTT, was pleased to hear this resolution introduced. If passed unanimously, after a general expression of concurring sentiment, its influence could not fail to be of great importance.

DR. PETERS, wished to express his gratification at the introduction of the resolution, and on account of the language which had given occasion for it. It had been said 1800 years ago, that 'these things were hid from the wise and prudent, and were revealed unto babes.' In our day, the wise and prudent talked as little children, in heeding the teachings of our Lord and Master.

PROF. ALFRED GREENLEAF, of Brooklyn, said, that he could bear testimony to the consistency of Mr. Randall's remarks with the practice of the public schools of the city of New York; for on a visiting tour through the schools of this city, he had found religious instruction in all the schools, from the Free Academy, down to the very lowest form of the Infant School.

MR. AMOS PERRY, of New London, Conn., said, that in traveling through Europe, he had heard the American system of education stigmatized as an ungodly and Christless system. He should rejoice to have that misapprehension by the passage of the resolution corrected.

PROF. CALEB MILLS, of Indiana, desired simply to make known the fact that the State of Indiana, had placed the Bible at the head of their text-books.

MR. GIDEON F. THAYER, of Boston, favored the resolution. In

* This article should have followed the Remarks of Prof. Bache, on a National University, in No. 4. Vol. I., p. 477.

Massachusetts for some years it had been at the option of the teacher to open the school by the reading of the Bible, and by prayer, or not, and in almost all cases it had been attended to. But at the last session of the legislature a law had been passed requiring the Bible to be read every day in the schools.

REV. DR. TALMADGE, of Georgia, said:—that as he was the only delegate from several Southern Atlantic States, he felt called upon to say that in that section the great question of religious education was becoming an absorbing topic. They were beginning to feel that intellectual education is a curse, unless moral and religious education go with it, and he therefore desired an expression of opinion on the subject, by the Association.

PROF. E. A. ANDREWS, of Connecticut, rejoiced at the introduction of the resolution, and at the occasion which had called for it. He was gratified also, that there had been such a universal expression of sentiment in favor of the importance of religious training.

PRES. TAPPAN, of Michigan, said, that Professors Bache and Pierce, had done honor to themselves by making the statements referred to in the resolution. He did not wonder at it; he should have wondered if they had not; for an undevout astronomer or scientific man is the maddest of all men.

PROF. AGNEW, of Pittsfield, Mass., obtained the floor, but yielded to

BISHOP POTTER, of Pennsylvania, who remarked, that the passage of the resolution might involve more serious consequences than would at first appear. He inquired whether the language ascribed to Prof. Bache was correct; whether it was certain the language used in his address, or adopted by him; that he had declared that religious instruction should be a prominent feature "in all our systems of *public* education."

PROF. DAVIES stated, that previous to offering the resolution, he had submitted it to Prof. Bache, and asked his permission to introduce it; and the sentiment had his sanction.

BISHOP POTTER. I am very sorry to be compelled to interpose a little doubt, not as to Prof. Bache's opinions, although stated more specifically in the resolution, than I understood him to express them in the address, or than as held by him a few years ago, but as to the portentous question, whether religious instruction shall take a leading place in our *public* schools. I say that is a portentous question; a question involving a problem that is not yet solved, a problem, the solution of which, has thus far been attempted in vain in our father-land, and the attempt to solve which has, I think, materially retarded the progress of public instruction in Great Britain.

Mr. President, if it is safe for anybody to say a word upon this subject in the direction in which I am speaking, it must be safe for a minister of Christ, safe for one who has proudly identified himself always with our public system of instruction, and has indignantly resented always the imputation that it is a godless system. As it is now, it does not attempt dogmatically to teach the religion of Christ; and yet it is not un-chris-

tian; it is not anti-christian; it is not godless. It might be a great deal more religious; I trust in God that it will be so. But I really doubt whether the adoption of resolutions of this kind, by a body which has no authority, no influence except a persuasive moral power, is calculated to accelerate that consummation most devoutly to be wished. I have been delighted with the exhibition of the spirit manifested here this evening. It is a delightful exponent of what I believe to be a great movement in the American mind; a movement towards the clear profound conviction that moral and religious culture must have their appropriate place in the great business of education, or we do not achieve our whole work of education in our public schools. After all, there is a better school than the public school, and that is the family, and I may add, the parochial or Sunday-school, the catechetical class, the Bible class. And although in our public schools, I think a great deal more religion can be taught than has been taught, yet if we are to reach that most desirable end, I think we should not send abroad proclamations which promise more than we can perform.

I will go no further into the subject now. I think I have indicated that there are difficulties about this question; and if you wish to penetrate and leave the system of public instruction by true religious spirit, you are not to do it by resolutions, not by talking, but by working. As is the teacher, so, we were told to-day, is the school; subject to no limitations. There is no educational proposition more sound or more important. Just in proportion as we succeed in raising the vocation and character of our teachers, just in that proportion we guaranty that they shall be godly and Christlike men and women. Good, conscientious devout men and women, are the only people who will ultimately come up to the standard of requirement which I believe is rapidly becoming universal throughout the United States. And if you place in every primary school a devout conscientious enlightened Christian heart, you have accomplished the great work. It is not the amount of dogmatic instruction they give upon religion, but the mighty argument in favor of religion which transpires every day and hour of their lives, which is to be desired. But you must recollect that they can only teach the ten commandments, the Lord's prayer, the Sermon on the Mount, and a few other similar passages, before they get over into the stony region of polemics; God save the schools from that. (Applause.)

PROF. AGNEW, wished to be heard for a few minutes before the vote was taken. He deeply sympathized with the views expressed by Bishop Potter; and his vote might seem singular if given without explanation. Further debate was cut off, in order to listen to a lecture by PROF. HUNTINGTON, of Cambridge, appointed for this evening; but after the conclusion of the lecture.

PROF. DAVIES, asked permission to withdraw his resolution. He was confident that it could not be passed. He had never heard Bishop Potter discuss any point in which he did not fully convince his audience of the wisdom and propriety of his position. All would carry home in their

hearts the sentiment expressed by the resolution, and if its public expression could do harm, it might well be forborne.

PROF. AGNEW said, that this struck him as a very singular proceeding. Those in favor of the resolution had been heard at length, while those opposed to its present form, had had no opportunity to explain.

PROF. DAVIES demanded the previous question ; but was not sustained.

REV. MR. HAZELTINE, should regret the withdrawal of the resolution. He wished it to be passed as the sentiment of the Association to go out to the country. It was needed, if not in Massachusetts or New York, at least in the Western states, where infidelity is springing up, and the Bible is not used in the schools.

PROF. PROUDFIRE, suggested, that as it was already late, it would be better to leave the subject for consideration to-morrow ; and accordingly, on Thursday evening,

The Association resumed the consideration of the resolution offered last evening by Prof. DAVIES, who moved the following substitute therefor :

Resolved, That the recognition by our late President, Prof. BACHE, in his retiring address, of the preëminent importance of moral and religious culture in the training of youth, meets upon the part of this Association with the profoundest sympathy and approbation.

MR. RANDALL. I move that the original resolution be introduced as a substitute. I offer it because I think that resolution expresses, or was intended to express the sense and the religious conviction of this country. No one doubts the "importance of moral and religious culture in the training of youth." That is not the principle we are called upon here to express as a public body. We are the representatives of the educational public ;—collegiate university, and common school education, are represented here. I desire that the sentiment originally propounded by the son of the daughter of Benjamin Franklin, and adopted also by one of the most Scientific men in the Union, that sentiment which was received here with so much enthusiasm last evening, shall be directly voted upon. I desire to see what is the sense of this Association upon it. I believe that moral and religious culture should enter as an element into all our systems of public education, and by that sentiment as an educator, I am prepared to stand or fall. We have tried the experiment in this city. We know that it works well. We have here, upwards of a hundred public schools, and in them all, there are not more than half a dozen in which religious and moral culture do not prevail, in which the Bible is not read at the opening of the school, the Lord's prayer repeated, and some hymn sung. This constitutes a part, and a very important part of moral and religious culture. Gentlemen need entertain no apprehensions of sectarian danger. This resolution embraces nothing of the kind. It expresses nothing of peculiar specific dogmatical theology. It was not intended to include that. It was intended as a simple recognition of the fact that our institutions rest and ought to rest upon Christianity as the basis. Whether you call it the Christianity of

moral and religious culture, or the Christianity of the Bible, is indifferent to me. The resolution as originally introduced, seems to me to be correct, and ought not lightly to be set aside. The principle seemed last evening to embody the sense of the Association; and I see no good reason for substituting one which has, it appears to me, no manner of connection with this Association. We might as well legislate upon any other truism, any other abstract proposition. I desire to see the original resolution adopted, or some good reasons shown why it should not be.

PROF. DAVIES explained that the original resolution was in the hands of the Association, so that he had merely offered his substitute as an amendment. If the Association refused to adopt it, the question would recur upon the original resolution offered last evening. He then proceeded to say:

Now, Mr. President, the question whether we shall have the substitute or the original resolution, involves just the question which has divided the good and the great from the beginning of the world to the present time. It is a question whether those who are acting together, or who wish to act together, who have the greatest interest and strongest desire to unite their minds upon one common cause, shall come upon a platform upon which they can all stand, or whether they shall spend their time in discussions where there will be a difference of opinion, and whether they shall split upon the ninth part of a hair, and separate into parties in regard to matters immaterial, and about which there is but a verbal difference. There is a great deal of true philosophy in the fact, that where two men, or two parties, or two sections, disagree but in the ninth part of a hair, there is no feeling of toleration, no sentiment of peace, but war to the knife is proclaimed on both sides. And why? Because neither party can see, when they are together all but the thickness of a leaf of tissue-paper, why they should not come exactly together, why the other party should not give up that little difference. When you, Mr. A., agree with me, Mr. B., so nearly, why can't you give up that little difference and agree with me exactly? So Mr. A., says, when you Mr. B., agree with me so nearly, do be a Christian now, and agree with me entirely.

I was once dining with Gen. Scott, when the question of "49° or 54° 40'" was under discussion, and he was explaining to many Senators, why we ought not to be so belligerent. Said a Senator, "why is it, Gen. Scott, that you, whose business it is to fight, are so anxious for peace?" "Ah," said he, "it is because I may have some little notion of what war is." Now, sir, this is precisely my own experience. I have had some little notion of what controversy is, so that in all Associations I will give up everything but principle, for the sake of unity. I am not willing to come here into this Association for the first time,—for I have not been able to come before,—and to introduce a principle, which, in the opinion of the founder of this very Association, will do great harm, a principle which has been discussed in all the meetings of the Association, which has been earnestly considered by the best minds and, ana-

lyzed and objected to by some of the purest hearts of the country, and to pass a vote upon a mere form of words, when in my judgment, the substitute will do equal good with the original resolution. I admit, sir, that a casuist of language, an acute logician, may analyze the original resolution, and analyze the substitute in such a way as to get the basis of an argument that shall reach to the dome of the building; but, sir, it will be an inverted pyramid, standing upon a point and expanding by the fancies of argument. I therefore do earnestly ask this Association, as I had the misfortune to introduce the subject that has caused this difference of opinion, to waive, as far as they can, everything which shall prevent us from standing upon a common platform, when, in my opinion, the main object of Prof. Bache and Prof. Pierce, will be entirely carried out. A lady who took down the very words of Prof. Bache, has been kind enough to hand me the manuscript, and these were his words: "The meeting has been opened, as it should have been, by prayer; and I for one, would never desire to have the study of the Works of God separated from the study of the Word of God, and then we may always depend upon his blessing." The substitute carries out that general idea perfectly.

MR. RANDALL. There is nothing about public schools there.

PROF. DAVIES. The question of public schools was not raised; and why should we raise a mere point of casuistry about a name, about a word?

MR. GRIMSHAW, of Delaware, inquired what was meant in these resolutions by the word "religion." The substitute seemed to him rather to dodge the issue than to meet it directly. He wished the language to be so plain that no one would be in doubt as to its meaning. There seemed to be objections to the resolution on account of the term "public education;" and now, it was sought to amend it by substituting the expression, "the training of youth." But where are the youth trained in this country, the masses of the youth, but in the public schools? He hoped it was not the intention of the Association to legislate upon private schools or colleges. He regarded the substitute as merely adapted to induce the Association to vote for a proposition which all might not wish to endorse.

Other business being in order, the further consideration of the resolution was postponed to the

EVENING SESSION, when the Association resumed the consideration of Prof. DAVIES' resolution.

MR. RANDALL. I think it is important that we should understand the precise state of the question before us; which I believe to be this. At the opening of the Association, the retiring president gave expression, or was understood to give expression to the noble sentiment, that religious and moral instruction should form a prominent element in all our systems of public education. Whether Prof. Bache used the words ascribed to him is a matter of question, but I have no doubt that he meant to express that idea. At the meeting of the Association last

evening, Prof. Davies brought forward a resolution, in which the Association expressed its assent to the doctrine ascribed to Prof. Bache. That resolution received the warm and hearty concurrence of every gentleman who spoke on the subject as I understood. There was a concurrence of opinion, North and South, East and West, and the earnest desire was expressed that it should go forth to the world as approved by this Association. But for some reason or other, the mover of that resolution has to-day substituted another and as I conceive a totally different one.

The President, (HON. HENRY BARNARD,) explained to Mr. Randall, who had been absent during the remarks of Bishop Potter, the reason for changing the form of the resolution.

MR. RANDALL. Upon that subject I presume we shall have full light. The difference between the two resolutions seems to me to be this. The original resolution regards religious and moral instruction, important in all our systems of public education; while the present resolution is silent as to public education. It merely regards it as an important element in the training of the young. Upon that subject there is no difference of opinion. All of us are prepared to assent to the proposition contained in that substitute; but that is not a sentiment, as I conceive, which this Association is called upon to express. Whatever sentiment this Association may express, should have a specific application to our systems of public education, or, if you choose, public or private education. Herein, consists the difference. The one resolution announces a more formal abstract proposition, upon which we are not called upon, as I conceive, to express an opinion as an Association; the other expresses our sentiments upon a proposition with regard to which there has been considerable difference of opinion in the community, in relation to which we have felt a deep interest in all sections of the country. Gentlemen were gratified last night that at last this sentiment had found expression in an Association like this, composed of delegates from every section of our widely extended union.

It is, perhaps, the more important that we should settle this question, from the fact that at the last meeting of the New York State Teachers' Convention, at Utica; this very question came up for discussion, and it was then announced from high authority that the religious and the moral element ought not to enter into our systems of public instruction; that religious teaching and moral teaching, should be left to the family and to the church. If this doctrine is permitted to go forth to the world, it will at once be perceived that we cannot sustain, upon any reasonable, rational, independent ground, our systems of public instruction. If we strike out the religious and moral elements, what are our schools good for, except merely for intellectual teaching; and the idea is very prevalent throughout the country, that intellectual teaching alone, the cultivation of the head without the cultivation of the heart, is not the sort of teaching which should be given in our seminaries of learning.

I understand that one objection to this resolution, is the fact that simi-

lar resolutions have occasioned difficulties in Europe, especially in Great Britain, from the peculiar state of the institutions of those countries. But the propositions made across the water, were not to place the educational institutions upon the basis of Christianity, but upon particular denominational creeds. Sectarianism came in there under the great question of religious education.

I am unwilling to embarrass the deliberations or proceedings of this Convention in any respect. I feel as deep a desire as Prof. Davies himself that all our deliberations should as far as possible be unanimous. I think that if this question had been disposed of at an earlier period, it might have been done with great unanimity. But at all events, I desire that this Association should express its opinion upon this subject; for it is one of vital importance, involving a great principle, and of deep interest to us all. I desire that its opinion should go forth one way or the other. If we now abandon the resolution, and adopt a substitute which does not recognize the importance of the religious and moral element in our public instruction, the conclusion will be drawn that we desire to ignore it, or are opposed to it.

DR. McELIGOTT moved to amend the amendment, by substituting the following resolution :

Resolved, That appropriate portions of the Holy Scriptures ought daily to be read in all schools and other institutions devoted to secular education, as a public recognition of the Divine Authority of the Bible, as a confirmation of the religious teachings which the pupils are always presumed elsewhere to receive, and as a means of diffusing directly from their source the wholesome influences of sound morality.

MR. RANDALL seconded the amendment.

DR. McELIGOTT said that it was well known to all acquainted with the history of this institution from the beginning, that from the time of the Convention which resulted in the formation of the society, it had been his earnest wish to obtain, if possible, the moral effect of the public expression by the Association, of an opinion in favor of the practice commended in this amendment. He had made the endeavor at several different meetings; but at every time some adverse influence had prevented its success. The last time was at Newark. He was just then recovering from a severe fit of sickness, and, though hardly able to be present, he still sought to obtain a vote on this subject. But the debate was rudely cut off by the application of the Previous Question. So flagrant was the injustice committed at that time, that it excited some public interest outside of the Association. The opinion went extensively abroad that the majority of us were opposed to the practice of using the Bible, in any way, in our public schools. This impression gave birth to a letter, published in one of our religious newspapers, and understood to be from the pen of a distinguished clergyman of this city, which represented the Association in the same unfavorable light.

The opinion, thus imbibed and disseminated, derived a fresh confirmation from what happened at the next meeting; for then the matter came up in

the form of a lecture, wherein the ground was distinctly taken that it was improper to bring religious teaching, in any shape whatever, into the common schools. They, it was held, were for secular education, and for secular education alone. To introduce religious instruction into the public schools would, it was argued, be quite as inappropriate as to bring into the pulpit the subjects of Rhetoric, Chemistry, or the Law. He would say nothing just now about the soundness of this theory. He merely adverted to the lecture as further confirming the opinion that this Association was opposed to the introduction of the Bible into the schools.

When, therefore, Prof. Bache delivered his retiring address, it was most gratifying to hear him declare that at the bottom of all of our educational institutions there should be a deep religious and moral influence,—that the heaven of religion, indeed, should permeate the whole system, so that the educated man might go forth not only sharpened in intellect, but sound in heart. He had rejoiced, with others who heard the distinguished Professor, that, in him who might, perhaps, be supposed to be so absorbed in the intricacies of science, as to overlook the importance of religion, God had furnished a testimony so satisfactory,—that, like Newton, after exploring regions of thought unknown to common men, he still felt it to be the highest exercise of the soul to look up to heaven and adore with reverence the Infinite Mind. And when, last evening, Prof. Davies had introduced his resolution, and supported it in an eloquent speech, it was really delightful to witness the perfect unanimity with which it was received. Clergymen, teachers, all of every name and grade, followed one another in quick succession, every one warmly commending the sentiment which it embodied.

But suddenly the whole thing was stopped, as if by magic. A voice from heaven could hardly have arrested it more effectually. Those who had supported it with voices eloquent as angels', forthwith became silent as the inhabitants of the tomb. Why this change? What sudden discovery had been made? Had Prof. Bache been mistaken? Had those who had been so eloquent in defense of the resolution found themselves, all at once, in the wrong? Whatever the cause, all the good feeling and good speaking growing out of the occasion came directly to an end, and even the gentleman himself who offered the resolution, stepped forward and asked the Association to adopt, in its stead, another which he had prepared—a resolution affirming just nothing at all; being one of those beautiful substitutions in which nothing is made the substitute for something. He meant no disparagement by this remark. He spoke simply of the result, as it appeared to him. Doubtless there was a reason for the change, and, when developed, he might, perhaps, recognize the force of that reason. The only motive assigned by Prof. Davies, if he understood him aright, for asking leave of withdrawal, was his profound regard for the judgment of Bishop Potter, who doubted the expediency of such a resolution. He would take occasion to say that he had, perhaps, quite as much confidence in the Bishop as Prof. Davies had. He re-

spected his character, and loved him for his personal worth and for his services in the cause of public education. Yet this was a question in which merely personal considerations ought to have no weight whatever.

He regretted much that the Bishop, when he rose to intimate his doubts about the expediency of passing such a resolution as that of Prof. Davies, had not proceeded to state at large his objections; for he believed that they would have been found substantially the same with those sought to be obviated in this amendment. The resolution of Prof. Davies seems to contemplate formal teaching of religious truths. But no teacher could honestly undertake to teach religion, without giving to his teachings the bias of his own particular creed; and if he did so, every one of a different faith would forthwith become offended. All, therefore, that could be wisely done, in our public schools, was to read appropriate passages from the Holy Scriptures, at the opening in the morning, or at other suitable times, without undertaking to comment upon them. This is all that is commended in the amendment. This surely we may say, not as partisans, or promoters of a particular sect, but as citizens of a Christian land. This is due to the Bible; for the Bible is an unsectarian book. It is the most catholic of all books; catholic, because its divine Author is catholic,—catholic, because its revelations are intended for all mankind,—catholic, because all the thousand sects into which Christendom is unfortunately divided, still look up to it, and profess to make it their guide and standard.

But there are many, it may be said, who reject the Bible altogether, as unworthy of belief, and that to them, the reading of it in the schools would be an infringement of their rights. In respect to persons of this class, it has been well said, that for a man to deny the credibility of the Bible, in these days, is to proclaim himself a fool, a knave, or an ignoramus. A fool he must be, if he can not comprehend the lucid reasoning by which its truth has been established; a knave he certainly is, if having fairly weighed and understood the evidence, he still professes to disbelieve what his reason must have forced him to accept; and surely he is an ignoramus, if he gives judgment against the book, without knowing what may be its claims to the confidence of mankind. But however this may be, the Divine authority of the Bible is certainly taken for granted in the very constitution of our government, and, therefore, no one's rights can be invaded by reading it in the schools. Every officer of the government, from the President down to the meanest official, is inducted into office under the solemnity of an oath on that volume. Christianity, the religion which it teaches, in one way or another, permeates all our institutions. Every thing in our political system indicates its recognition of the principle, that the Bible is the common standard of right and wrong in morals.

If, then, the Bible be truly unsectarian, if it be the source of all sound morals,—in a word, a revelation from God to man, shall it be presented as of Divine authority to the children in our schools? Shall they be kept five days in the week, the largest portion of their school time, under instruction, where that volume is never permitted to be opened? That is the

simple question. It has been asked,—What benefit can arise from our commending the practice of reading the Bible in the schools? Much in many ways. Among others, it would throw a protecting influence around many faithful teachers. It is well known that, in all parts of the country, there are some inveterate enemies of religion. These men often manage to get into office, and so become connected with the schools. Now when a man who respects religion, happens to be the head of a school, where one or more of the school officers are of the opposite stamp, might not his hands be strengthened by the formal sanctions of a body like this? Shall he not be able to say, if necessary, that an Association of the most wise and learned men of the country have declared it to be their opinion that the Bible ought to be read in the schools? Would not official authorities be sometimes led to pause a moment, and consider, before acting in the face of such a sentiment from such a source? Were there no other benefit, this alone ought to insure the passage of this amendment.

But this subject is dividing the country at large, and the Association must take one side or the other. He should regard the ignoring of the Bible in the schools as more than counterbalancing all the good they could ever accomplish in other directions; and should, in that event, be willing to try whether another society might not be founded, that would not hesitate openly to lend its sanction to its use, at least in the way here advocated. He could not express his surprise at being compelled, in a body like this, to stand up in defense of such a position. Was he in the midst of professed infidels? Was he talking to men opposed or indifferent to all religion? Was he addressing a collection of petty politicians,—men moved only by the fear of losing their places? He had certainly thought he was speaking to a company of Christian men. And, in that full belief, he called upon them, in the name of their Master, to stand by the principle involved in this discussion.

He asked only that public recognition of the Bible, indicated in his amendment. He was satisfied to leave all direct and formal teaching of religion to the Church, to the Sunday-school, and to the fireside. But when his son entered the day-school, he wanted him there to find some formal regard to the authority of that sacred volume which he was taught, however feebly and imperfectly, to reverence at home.

He did not, therefore, agree with those who were in favor of introducing the Bible, as a text-book, into our public schools and making religious instruction a part of the ordinary exercises. The best work on morals, some one had said, was a moral man for the teacher; so the best work on religion for the use of schools, was a religious man for the teacher. Pupils were governed by what they saw rather than by what they heard. He would, therefore, of course recommend the greatest care in selecting teachers. They should be persons of high moral character. But he would not, on that account, refuse or omit the reading of the Bible, in the presence of the school, seeing that it is the only source of all sound morality, and that this public recognition of its Divine authority is a standing

confirmation of the teachings elsewhere received, or presumed to be received, by the pupils. This is all he had ever asked the Association to commend. And now, if it should appear that they meant deliberately to ignore all use of the Bible, in our common schools, there was but one course left him and those sympathizing with him to pursue.

MR. CLARK, of New Orleans, rejoiced to be able to breathe an atmosphere so pregnant with piety and morality. The sentiments which had proceeded from the lips of gentlemen, were all in one direction, that the foundation of all education which shall be truly valuable is the Bible. He had heard with delight, the remarks of Prof. Bache, and of Prof. Pierce. And when the original resolution was proposed by Prof. Davies, he had felt a thrill of delight that so large an Association of learned and respectable men engaged in the great work of education, were ready to give their sanction to religious education. Yet he had felt that there was a difficulty in the way of the passage of the resolution; for resolutions are valuable only so far as they are practicable. It was necessary, therefore, that the resolution should be one which could be carried into practical effect. It might be easy for gentlemen from Connecticut, Massachusetts, or New York, to carry the resolution into effect; but it must be borne in mind that the voice of this Association would not be heard alone in the New England and Middle States. He claimed for Louisiana, and neighboring States, some sympathy and some interest in the passage of such a resolution. He asked that it should be such as not to be detrimental to the interests of education even there. In the South and the West, the great question whether the Bible should be used in the schools, had been discussed, and had been decided differently from the decisions in the Eastern States. In the city of New Orleans, for instance, for a long time the Bible had been permitted to be used in the schools, and a form of prayer had been adopted which should not conflict with any sectarian views: and yet in consequence of the agitation of this subject, in consequence of the passage of such resolutions as this, in one quarter of the Union and another, it was found that they had upon their Board, men, who wished to drive the Bible from the schools; and now for several years the custom of reading the Bible and opening the school with prayer had been discontinued. And the same was true of the whole State of Louisiana, with the exception of one and the smallest district. Agitation he believed to have been the cause of this change. If the subject had been let alone; if the minds of the pupils had been operated upon by means of that Unconscious Tuition so eloquently treated of last evening, the Bible might still have been read, prayer might still have been used, and a powerful religious and moral influence might thus have been exerted.

It is impossible to carry the resolution into effect throughout the length and breadth of the land. There are respectable and religious portions of the community that will not yield to it. They will say that you shall not teach religion in the schools. They will say that the reading of King James' version of the Bible is not warranted by their system of religion, and

therefore you are attempting to engraft sectarian influences upon the school. And thus far they have succeeded in keeping the Bible out of the schools. It is not practical, therefore, to have the Bible used in all our schools. And if we undertake to carry into effect the resolution first offered, and introduce moral and religious instruction, how can that be done? As Bishop Potter remarked last evening, when you have taught the Ten Commandments, the Lord's Prayer, the Sermon on the Mount, and a few other passages of the Scripture, you have taught all that you can teach without entering upon disputed ground, upon the region of polemics. And if the teacher is capable and disposed to instruct in religious truths, what time can he find in the course of the day, further than by unconscious tuition?

Then there is another difficulty, that a large portion of the teachers have very little religion operating upon their minds. Where the religion is in the heart of the teacher, he can find abundant occasion for reference to the Scriptures without formally reading them. But where the teacher is either indifferent to religion or hostile to it, what better instrument could Satan desire than to have such a man compelled to teach religion? The difficulty is fundamental.

The doctrine had been urged upon this floor, that the government was bound to give every man in the community an education. This was a sentiment with which he could not agree; and led directly to the impracticable result in this resolution, if the government is undertaking to give a religious and moral education as well as an intellectual one. His view of the public system of education, was that it was intended to be merely supplemental; and it was only upon this view that we could avoid the conclusion that the government is bound not only to give an education to children in the public schools, but to require a certain religious and moral education, to be given to children in the private schools; for it cannot shake off the responsibility of providing that all children shall have such an education, if the principle is correct. But the principle upon which our government was founded was the spirit of religious toleration. And he would consider an education which does not recognize the Bible, as better than no education at all, because it opens the mind of the pupil, so that it becomes better able to receive religious instruction from elsewhere. He wished it to be thoroughly understood that he would be glad to have religious and moral instruction given in the public schools, but feared that either of the resolutions proposed, would create a hostility to it, and thus prevent rather than aid it. The better course would be, to see that the teachers are competent and disposed to give religious instruction, and then leave the matter to their discretion, under the peculiar circumstances of their several positions. He objected to the amendment of Dr. McElligott, particularly, because it specified the manner in which religious instruction should be given.

Mrs. STUART here sung a song; after which, a vote having been passed, limiting each speaker to ten minutes, the debate proceeded.

Prof. GREENLEAF said that this question had so affected him as to pre-

vert him enjoying his usual sleep last night. When Prof. Bache had sketched so beautifully and completely, an entire system of education for this country, he had felt that a mark had been made by this meeting; that such a system of American education was one of the wants of our country, and that we should have it because we need it, just as we had the telegraph because we needed it. And now, if a resolution could be passed in vindication of a moral and religious education, instruction in the divine truths of the Bible, another blow would be struck by this Convention, and not simply to vibrate in our own country, but spoken to-day, would go at once all over the world. He had lived twenty years in the city of New York, and felt that there was a need not only of all the religious instruction that could be given in the church and the family, but also of religious instruction in the schools.

REV. DR. McLEAN, of Pennsylvania, said that he could vote for all three of the resolutions with a good deal of pleasure, and he should like to have the vote taken upon the whole, and have them all adopted by the Association. He had none of that mawkish sensibility which refrained from expressing sentiments, for fear that the truth might not be congenial to others; and no proposition could be more indisputably true, than that religion must mingle with all our instruction to make it effective for good. Were the Association afraid to say that the Bible, which is the bulwark of our system, that for which we would peril life, liberty, everything, ought to be read in our schools? We had not refrained from arresting the self-evident principles of the Declaration of Independence, because there were a great many people who did not like them. And not a speaker had undertaken to dispute the truth of any one of the three resolutions; and should Christian men be afraid to assert principles upon which they were all agreed? It was only a question of time. Religion must be taught hereafter more than it ever has been. And they could do no less now than to plant their feet immutably upon the reading of the Bible in the Schools.

ERASTUS C. BENEDICT, of New York, thought that the resolution had not yet been put into such a form as to express the sentiment which a considerable portion of the members of the Association desired to express. In the original resolution, language was ascribed to Prof. Bache, which many thought he had not used.

PROF. DAVIES restated that before bringing forward the resolution, it had been shown to Prof. Bache, and received his sanction.

MR. BENEDICT said that that was satisfactory proof that he approved of the sentiment, but not that he used that form of expression in his retiring address. What he said was that he cordially approved of the opening of this Association with prayer, and that he disapproved of the separation of instruction upon the works of God and upon the Word of God. If therefore we are to undertake to quote the words of Prof. Bache, we have no right to put other words into his mouth, even although they may be such as to obtain his concurrence. And Dr. McElligott, in defending his amendment, gave ample reasons why the

original resolution should not pass. He considers it hardly a debatable proposition, it is so utterly impracticable. And thus with Dr. McElligott's resolution, as shown by the gentleman from New Orleans. That resolution only contemplates reading the Bible, it does not contemplate further religious instruction at all. But is the Association to go against religious instruction? Not at all. The debate had only shown that they were attempting to adopt resolutions, without having fully settled in their own minds what they wished to accomplish. And it was inexpedient to disturb the harmony of the Association, by the discussion of subjects which had created dissension, and excited feeling all over the country. He was in favor of adopting Prof. Davies' substitute, that moral and religious instruction are necessary in the training of youth. It had been said that it was useless to vote for that, because there was but one opinion in regard to it. He regarded it as a reason for voting for it, that their opinions upon it were so harmonious. Their very unanimity was strong evidence that the resolution was wise and discreet. But could it be said to be wise and discreet to attempt to adopt a resolution in regard to which they were divided in opinion? The Association having no corporate force, no power to issue an edict, harmony was requisite to give moral force to their action. And he felt free to say that if his own opinion was not clear upon the matter, he should regard the opinion of Bishop Potter, that the original resolution was inexpedient to be adopted, as coming from a source whose experience, and information, and integrity upon that subject, could be doubted by no one, and whose opinion was worthy to be adopted.

As to the Bible being an unsectarian book, he believed that if there was a thoroughly Protestant book anywhere, it was King James' translation of the Bible. It was in vain to say that the book is Catholic, and that all appeal to it; for the Catholics do not appeal to King James' version; and it was not the question whether the Hebrew and the Greek texts should be used in the schools. Catholics considered the Protestant version of the Bible as the great difficulty, and would not consent that it should be read.

PRESIDENT TAPPAN. The history of this discussion is very simple. President Bache delivered a short address in retiring from the presidential chair of this Association. That address so simple and unpretending, was filled with remarks of the highest importance relating to our educational interests. It was a very comprehensive and a very happy address. We all felt it; we all responded to it. At the close of that address he remarked that he would say nothing about religion and morality particularly; that it was not necessary for him to enter into any detail upon that subject, because everybody acknowledged the importance of morality and religion in a system of education, and regarded it as the foundation and best part of all education. He uttered it as a common sentiment, one to which the whole audience would respond. We were delighted to hear the annunciation from Dr. Bache, because unfortunately in our world, however inconsistent it may be, men of

science have sometimes been given to infidelity; and we rejoiced that a man so distinguished as he for scientific attainments, should come out, and with sincerity and Christian morality, should utter such sentiments. It was the feeling awakened by the exhibition of a Christian character upon the part of a man of science. I do not say that Prof. Bache honored religion by this. He honored himself. He did nothing more than his duty. Still, as it was an important fact, Prof. Davies was led to draw up a resolution which was intended to express that response that we all felt to the sentiment of Dr. Bache—nothing more. It was not intended to enter into the discussion whether the Bible should be or should not be read in our public schools. I believe there is nowhere any State law forbidding the Bible to be read, or forbidding the exercise of religious influence, the best of which may be that Unconscious Tuition so often spoken of to-day, or those observations on religion and duty, continually springing up so naturally that I can hardly conceive how it is possible for any good teacher to avoid making these practical applications as they occur in the course of his instructions.

As an example I will refer to a lecture I heard many years ago, from Dr. Torrey, upon chemistry. He had given a very striking exhibition of the great exactness by which Nature herself weighs the component parts of a compound substance. And said he, here we have an illustration of that remarkable expression in Scripture, "He hath weighed the mountains in scales, and the hills in a balance." I remember the effect upon the audience, of that remark, showing that the universe is but the expression of the conceptions of the Divinity. We had an exhibition of the same thing at the Scientific Association at Providence, the other day. Prof. Pierce was discoursing upon the application of the calculus to observation, Dr. Bache had made upon the tides; and he said that God himself had ordained that man should study mathematics, that He had planned the universe in accordance with mathematical formulæ. When men come to study mathematics, they feel it to be but an instrument whereby to climb the Heavens of God, to penetrate the works of God; and these very formulæ are lights which God has given to mankind, to interpret His works. We all of us believe that there is a perfect correspondence between the Word of God and the works of God; and I suppose Prof. Bache meant nothing more than to express this spontaneous sentiment of his heart, for when he is pursuing science, he is not forgetful of the duties he owes to God as a Christian. I have drawn up a series of resolutions which I think embody the sense of the meeting; for really I conceive it to be merely a verbal difference which divides us. The resolutions are these:

Resolved, That the sentiment expressed in the remarks of Prof. Bache on retiring from the Presidential Chair of this Association—that religion and morality constitute the foundation and best part of education—is worthy alike of the Christian and the man of science.

Resolved, That this Association, in endorsing this sentiment, mean to indicate thereby their full belief that the most perfect harmony exists

between the Word and the works of God ; that the scientific and erudite theologian who expounds the first, and the devout and reverent philosopher who investigates the history and laws of the second, cannot essentially differ, but must move toward the same end, and together work for the good of man and the glory of God.

DR. McELGOTT suggested that it would not be in order to offer those resolutions at this time ; there being already pending an amendment in the second degree, and

PROF. TAPPAN stated that he would move their adoption whenever it should be in order.

BISHOP POTTER. I think it very unfortunate that a Convention of this kind, a conference for the free interchange of opinion, should allow itself to be drawn into divisions. I really do not see any great good to be accomplished by the passage of any resolution whatever, if it can be passed only by a majority. That was one reason why I deprecated last evening undertaking to pass such a resolution in this place. The subject of the religious instruction to be given in our schools, cannot be considered a settled question. Certainly with regard to the public schools, established by authority of law, and to a certain extent under the supervision of officers constituted by law, it cannot be considered—we are referring to the *quo modo*,—as a settled question. It is hardly a settled question in any country in the world, except under absolute despotisms ; and even there the authority of that despotism is exercised with exclusive reference to the particular form of belief to be tolerated and inculcated. In a country whose religious principles are based upon the largest possible toleration consistent with the existence of civilized society, you must carry the toleration into the schools as well as everywhere else ; and if you cannot get the parents of the children to agree that they shall themselves receive instruction from the same religious teacher, upon the Lord's day, is it to be expected that you can get them to concede that their children shall receive one common kind of religious instruction from their school teachers on the other six days in the week ?

The fact is that in this country the subject is surrounded by the greatest practical difficulties. Yet I think these difficulties are destined to be overcome ; and we are in the way of overcoming them. The great power through which we are gradually overcoming them, is the power of patience, of patient waiting. I think there is a great deal more religious instruction given in the public schools now, than twenty years ago. And bad, Sir, as your New York system was thirty years ago, it was a great deal better than no system at all. If the question was distinctly at issue, whether we should have schools with no Bible, no religious instruction in them, or no public schools at all ; I would say that I would surrender the Bible. There are other places where the Bible can be taught. Give me a place where the children shall be taught to be able to read the Bible, and I will take care that they shall read the Bible out of school, if they do not in school. Now, I believe in my heart, that it will be perfectly safe for the interest of every class

in the state of New York, and in the United States, to have the Bible read. I do not agree with Mr. Benedict, that King James' Bible can not be read in the schools. I do not believe that any Christian community in the world could be damaged by it. On the contrary if I had administration in that church supposed to be most sensitive, I would say, let the children read it under proper guards. I believe that the hold of that church upon public confidence would be increased by such a course, if she should take it to-morrow. But we can not expect that she will take it just now; although I should not be surprised if she should take it. I think we are moving forward towards the conviction that the Bible is a safe and salutary book to be read in our public schools. But I doubt whether such a result will be accelerated by passing such resolutions as this in this place, especially if they are to be passed after some warm debate, and by a small majority.

Where is the question, whether the Bible should be used in the schools, ultimately to be decided? It can not be decided by a body of this kind; for that would be a decision almost exclusively by outsiders. And for such a body to undertake to prescribe and dictate, unavoidably engenders the spirit of resistance. Let a man undertake to dictate to you, with regard to your private affairs, even the very course you had previously resolved to follow, and you are at once tempted to change it, for you wish to assert your right to regulate your own concerns. And where is that question, whether the Bible is to be read in the schools, ultimately to be decided? In 12,000 different localities in the State of New York. In more than half of them it has been settled already. The Bible is now read, I will venture to say, in more than half probably three-fourths of them; and were this Association of grave sages, devoted to the subject of education and the great interests of humanity, to resolve that the Bible ought to be read in these schools, they would tell you that you are quite behind the time of day. We do not need such a resolution as that. It will be regarded as simple surplusage. And when you come to the other districts which are discussing the subject among themselves, each one of those districts has its own peculiar difficulties, which can only be thoroughly known to themselves, which are to be dealt with by those immediately interested. And I think the ultimate settlement of these difficulties can only be retarded by the intrusion of any foreign power whatever. I believe there is a growing spirit of piety throughout this land, more and more inclining all these independent communities to the adoption of this policy. Leave it to that. Leave it to the great discussions which are going on all over the land. Leave it to the power of the pulpit and the press. Leave it to the almost unanimous expression of a wish, which has been heard within these walls. But do not step in and undertake to prescribe where you have no authority, and where your presence may be considered as an intrusion, if not resented as a disturbance.

The fact is, that there are conceivable cases in which the introduction of the Bible might be deprecated; and therefore the proposition con-

tained in Dr. McElligott's substitute, is one to which in the abstract I should not find myself able to consent. It is the proposition that in all schools the Bible should be daily read. I have no doubt that it ought to be read in all schools where it can be read without the sacrifice of an interest greater than that which you can gain from it. Suppose that the only teachers you have to fill the place, is one who demonstrates by his daily life that he is godless, without the fear of God before his eyes, who can not help, by the process of unconscious tuition, proclaiming the fact in his school that he does not fear God, that he does not in his heart regard the Bible. Nor will that man perform the duty you would impose upon him by law, in such a way as to promote reverence for the Scriptures, in such a way as to deepen in the hearts of those little ones the fear of God and the love of Christ? I say no. The whole process will be regarded by them, not as a solemn mockery, but as a farce. A worse impression upon the religious character and associations could not well be produced.

There is another conceivable case, owing to the prevalence of certain religious or anti-religious views. Because it is a singular fact that the public schools are opposed by those who contend that they have not religion enough in them, by those who contend that they have too much, and by those who contend that they have none at all. These three grounds are distinctly taken by the enemies of the public school system. And I can easily comprehend that affairs might take such a course that in ten years we should find the Protestants, the Catholics, and the unbelievers, all standing side by side, shoulder to shoulder, toppling that magnificent system to its base; and if that time shall ever come I verily believe it will have been invoked by the excessive zeal and impatience of those wishing to introduce religious instruction in these schools.

[The ten minutes having expired, the rule was suspended to allow Bishop Potter to continue his remarks.]

I will not abuse the privilege the Convention has extended me. I will simply make one remark with regard to the past history of this Association. There is nothing in its past history which has afforded me greater gratification, if I may except the great and noble gathering of educated men which has taken place here to an extent I never beheld before, than its course with regard to the adoption of resolutions. From the beginning, the policy has been to come together, and hold friendly conferences, the effect of which has been to make each separate one a sharer in the resources of all, and yet with no humiliation or want of self-respect. Hitherto, antagonism has been avoided; and especially have we avoided that greatest mistake of deliberative bodies, attempting to construct platforms with regard to debated and debatable questions. Politicians are constantly engaged in that business, and it does strike me as being one of the most ridiculous employments they could engage in; patching up always for the nonce, and very rarely involving a full and frank consideration of great principles. All such policies I should be

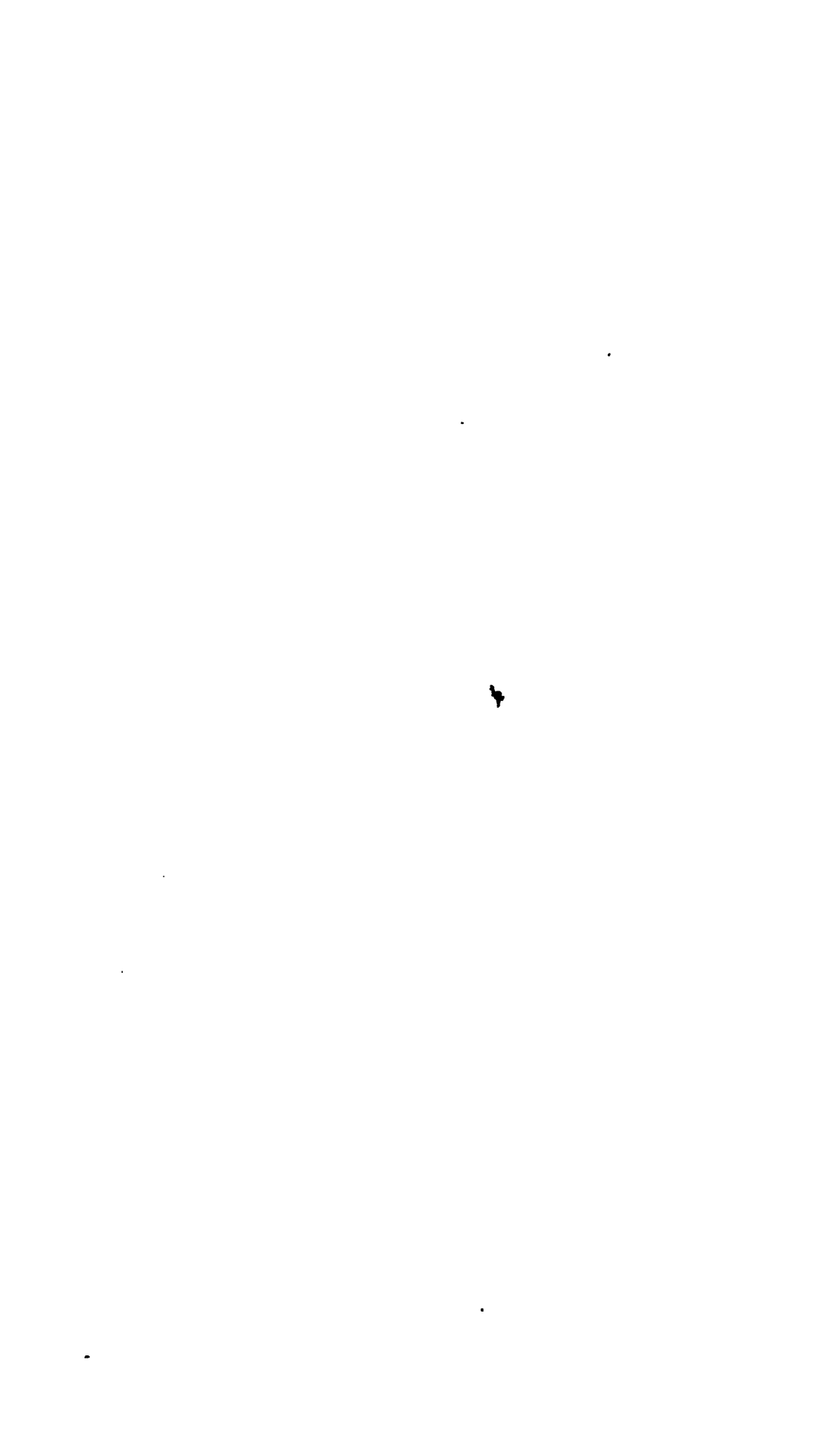
very glad to have the Association ignore, as it has hitherto done. We come together not for the purpose of being driven further assunder, but for the purpose of being drawn together and assimilated by the free interchange of paternal thought. I think that whenever the Association departs from that policy, and undertakes to pass resolutions by mere majorities, upon matters with regard to which the wisest minds still pause and hesitate, we shall lose our whole power of moral influence, and our dignity will have gone. It has been upon this principle, I believe, that hitherto, whenever this question has been brought up, as at Newark, and at Pittsburg, the subject has first been freely and frankly talked about and then, the resolution itself passed by, laying it upon the table, or disposing of it in some other way, without intending any possible disrespect to the Bible, but simply on account of our firm conviction that it is not the province of this Association to enter into a question of that kind.

MR. W. H. WELLS, of Massachusetts, said, that he believed no one had yet spoken from his state; and if any part of the Union might be sensitive with regard to the exclusion of the Bible from the schools, it would be Massachusetts. Yet, he did not believe that Massachusetts would desire the Convention to pass a resolution here, requiring the reading of the Bible, when there might be questions in various quarters as to the expediency of such a resolution. For one, he would be perfectly satisfied with the moral effect of the discussion which had taken place, if it should be reported. That would accomplish all that could be accomplished by passing resolutions, and he believed it would be satisfactory to every section of the country. He believed that all were agreed, that moral and religious instruction ought to be given in our public schools. He should prefer to leave the whole matter to the teacher.

PROF. AGNEW, said, that having given away to Bishop Potter last night, and afterwards been prevented from making any remark, by the previous question being called, he thought it due to himself to explain his position. His views had been so clearly expressed by Bishop Potter, that he should almost be satisfied to adopt that as sufficient explanation. He wished it to be understood that he was not opposed to using the Bible in the schools. He used it constantly in his own instructions, and should be glad if all could do the same. But he did not consider the question as settled. There might now be a quiet calm; but soon the storm and the earthquake might be upon us from this very question. He could not therefore consider it wise to enter into the question, and to attempt to pass either of the resolutions; for they could not agree upon any of them. He would therefore move that the further consideration of the whole subject be indefinitely postponed.

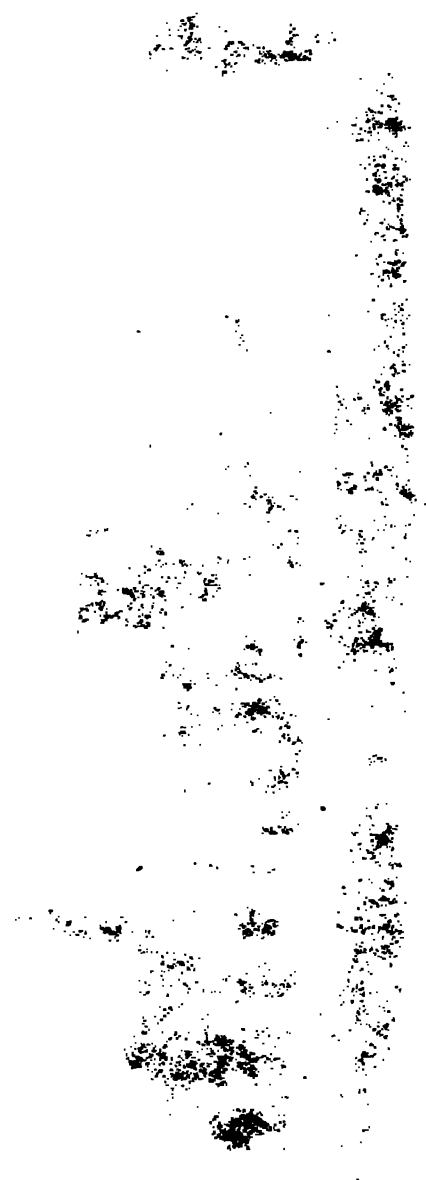
The motion was rejected;—

On motion by Mr Scott, the resolution, (with the amendments,) was laid upon the table.









XI. WILLISTON SEMINARY.

EAST HAMPTON, MASS.

WILLISTON SEMINARY, located in the village of East Hampton, Mass., owes its existence to the munificence of SAMUEL WILLISTON, who has at various times since 1841, given the sum of fifty-five thousand dollars* (\$55,000) toward "the establishment and endowment of an Institution for the intellectual, moral, and religious education of youth." The founder has set forth in a written and published instrument, his wishes for the guidance of those who are, or may be entrusted with the management of its concerns. From this remarkable document, entitled "Constitution of Williston Seminary, at *East Hampton, Mass.*," we make such extracts as set forth clearly the motives† which actuated the founder, the objects he had in view, and the way in which he hopes to have his objects accomplished. It will be borne in mind by the reader, that these extracts do not contain all that the founder has written under the several heads, but only a portion of the provisions and suggestions which we think may prove serviceable to others who may feel a disposition "to go and do likewise."

Believing, that the image and glory of an all-wise and holy God are most brightly reflected in the knowledge and holiness of his rational creatures, and that the best interests of our country, the church and the world are all involved in the intelligence, virtue, and piety of the rising generation; desiring also, if possible, to bring into existence some permanent agency, that shall live, when I am dead, and extend my usefulness to remote ages, I have thought I could in no other way more effectually serve God or my fellow-men, than by devoting a portion of the property which he has given me, to the establishment and ample endowment of an Institution, for the intellectual, moral and religious education of youth.

Adapting the Institution to the existing wants of the community, and the times in which my lot is cast, I have designed it to be neither a common Academy or an ordinary College, but a Seminary of intermediate grade, which shall combine all the advantages of a Classical Academy of the highest order with such other provisions as shall entitle it to the name of an English College, and which shall be sacredly consecrated with all its pecuniary and moral resources to the common cause of sound learning and of pure and undefiled religion.

It is my wish, that the young men, who repair to it for the purpose of fitting themselves for College, may be *thoroughly drilled* in all the preparatory studies, particularly in the *elements of accurate scholarship* in the *Latin and Greek*

* Besides the liberal endowment of the Seminary which bears his name, Mr. Williston is the largest pecuniary benefactor of Amherst College, having given to that Institution the sum of fifty thousand dollars.

† It would be interesting and instructive—and we think impulsive to others, to lift the veil from the first inception, and gradual development of such an institution as this, in the mind of the founder, until we find it a glorious reality in beautiful grounds, substantial buildings, and a well selected library and apparatus, faithful trustees, competent teachers, and diligent and improving pupils.

Languages, and at the same time *faithfully disciplined* in all those *habits*, not only of study, but of thought, feeling and action, which are so easily formed at this early stage of their education, and yet so likely to follow them in all the intricate windings of their pathway through life, and even down the trackless ages of eternity.

It is believed, that three years may advantageously, and should usually, be spent in studies preparatory to College, and it shall be the effort of the Trustees and Teachers to encourage by all suitable means the completion of a regular course of three years. To this end, certificates of graduation shall be given by the Principal to those students, and those only, who shall have completed the entire course to his satisfaction and at the same time have maintained an unblemished moral character.

It is expected moreover, that the standard of attainment in this Department will be elevated from time to time, as the standard of Classical Education rises in our best Colleges, and in the literary community. It is also my particular desire, that the Teachers examine the pupils of the Classical Department as to their attainments in the branches of a common English education, and, if they be found deficient, supply the deficiency. Bad orthography, bad penmanship or bad grammar—bad habits in any of the rudiments—if they be not corrected in the preparatory school, will probably be carried through College and not unlikely extend themselves to other studies and pursuits; whereas the habit of doing every thing well, so far as he goes, will likewise follow the student as long as he lives, and give completeness to whatever he does, and therefore cannot be too earnestly inculcated by the Teachers, or too carefully cultivated by the students.

My object in connecting an English Department with the Classical has been, partly, to supply the deficiencies in the English education of the Classical students, but chiefly, that those, who intend to pursue the various occupations of business, and have not the time, or the means, or the inclination to go through a regular Collegiate course, may obtain a better discipline and a wider acquaintance with the various branches of science and English Literature, than are now placed within their reach. The design therefore embraces ample instruction in English Grammar, Geography and Arithmetic, together with Reading, Writing, Orthography and Orthæpy; in Rhetoric, Logic and Intellectual and Moral Philosophy, and in the several branches of Mathematics and Natural Science.

Nor can I omit to mention here Sacred Music, particularly Vocal Music, as a branch, which I would have always taught by a well qualified Teacher, and would have every pupil urged to cultivate, as an important means at once to improve the voice, to refine the feelings, to assuage the passions and to soften the heart.

Believing that the education of the two sexes together, *so far as their appropriate studies coincide*, is in accordance with the constitution and design of nature, and, *under proper regulations*, not only safe from serious evils, but connected with positive advantages, I have made provision in the arrangement of the public rooms, and in the employment of a Female Teacher, for the admission of Females to all the privileges of the Seminary, which may be becoming or desirable for their sex. And it is my wish, that this arrangement should be continued under the watchful guardianship and care of the Trustees; unless after longer trial, or under a change of circumstances, it should prove manifestly detrimental to the main design of the Seminary, as above described.

TRUSTEES.

The board of Trustees shall consist of Clergymen and Laymen, in nearly equal proportion, of whom the Principal shall always be one, *ex officio*. The majority of the board shall never be residents of East Hampton, neither should persons be appointed Trustees, who reside at such a distance from East Hampton, as to preclude their punctual and regular attendance on the meetings of the Board. Whenever a vacancy shall occur in the Board, it shall be filled from a list of names propounded at a meeting held at least two weeks previous. Such elections and all others shall be by ballot. The Trustees shall hold an annual meeting at East Hampton, at the close of the Academic year, to examine into the condition of the Seminary, to look after the safety of the funds; to observe the manner in which the officers of trust and instruction perform their duties, and to transact such other business as may come before them.

A Committee of two of their own number shall be appointed at each annual meeting, whose duty it shall be to attend the Examination and other public exercises at the close of the ensuing Academic year.

The Trustees shall appoint the Principal and the permanent Teachers, at some regularly convened meeting. The less permanent Teachers may be appointed by some Committee invested with that power by the Trustees, subject, however, to the sanction of the Board at their next meeting. It is earnestly enjoined upon the Trustees to be prompt and decided, not only in filling such vacancies as may occur in the Providence of God, in the Board of Teachers, but in removing any Teacher who may prove incompetent or unfaithful, or unwilling to work, or whose continuance for other reasons, may materially impair the usefulness of the Seminary. It is designed that the Teachers shall be working men, zealous, laborious, and untiring in the duties of their office.

TEACHERS.

No person shall be appointed Principal or permanent Teacher, who is not a professor of the Christian Religion, and a man of reputed piety, of exemplary manners, of good natural abilities and literary acquirements, well acquainted with human nature, and apt both to govern and to teach. As far as practicable, the same qualifications shall be required in the inferior Teachers.

The Teachers shall hold frequent and regular meetings, for consultation in regard to the general welfare of the Seminary, and the proficiency of the pupils, and shall labor assiduously, not only that the Seminary accomplish the object of the Founder, but that each pupil answer the reasonable expectations of his parents and friends.

It shall be the duty of the Principal to exercise a general supervision over all the Classes and Departments; and he shall present a written report of the condition of the Seminary in its several Departments to the Trustees, at each annual meeting. In consideration of the peculiar and responsible duties thus imposed upon him, it is deemed proper and even desirable, that the Principal should not be employed during the entire period of school hours, in the work of immediate, daily instruction.

It is extremely desirable, that the Teachers should remember, that the great objects of the foundation, on which so much time and money and anxious thought have been expended, can never be realized without their zealous and energetic cooperation; that upon them rests the particular and immediate responsibility of sustaining and elevating the standard of literary and scientific attainment in the Seminary, and what is far more important in the view of the Founder, of maintaining and improving its moral and religious character and influence; and therefore it is expected of them, not only to impart able and faithful instruction in their respective departments of learning, but to guard the health and happiness and morals of their pupils, to cherish in them habits of order and neatness in their rooms and their persons, propriety in their deportment towards each other and their Teachers, refinement of manners in the ordinary intercourse of life, temperance in food and drink, economy in the use of money, and industry in the employment of all their time, as well as faithful application to their academic studies; to impress them with a lively sense of the great duties which they owe to themselves, their parents, their neighbors, their country, and their fellow men; and above all to inculcate that fear of the Lord which is the beginning of wisdom, and that departure from evil which is the truest understanding; ever considering that goodness without knowledge is powerless to do good, and knowledge without goodness is power only to do evil; while both combined form the character that most resembles God, and is best fitted to bless mankind.

BUILDINGS AND GROUNDS.

The Buildings and Property of Williston Seminary shall always be kept insured at good and responsible offices for an amount, as near the value of the same, as such offices are willing to insure for; and it shall be the duty of the Treasurer to execute this important regulation.

Believing, that more or less of manual labor, especially in the cultivation of the earth, is conducive to bodily health, and to the mental vigor and moral improvement of students, I would fain hope, that the garden on the grounds will always be cultivated and adorned by the young men, who are members of the Seminary,

and it is desired that the Trustees and Teachers should hold out suitable encouragement and inducements to the same.

BOARDING HOUSE.

It is my desire that the Boarding House be kept open and furnished, as it now is, for a Commons or Club, where such students as choose, may associate and board themselves at their own expense, and in their own way; provided, always, that due order be preserved and strict economy and temperance be practiced. Students may also board with private families in the neighborhood; provided, however, that the Trustees may require all to board in some other way, and no student shall be allowed to board in any place which the Trustees shall not approve.

FUNDS OF THE SEMINARY.

To prevent the funds of Williston Seminary from being wasted, I direct that they be loaned, if practicable, on unencumbered real estate, within this Commonwealth, worth, without the buildings, at least twice as much as the sum loaned.

MORAL AND RELIGIOUS CHARACTER.

To preclude all misunderstanding of the design of Williston Seminary, I declare again, in conclusion, that the primary and principal object of the Institution, is the glory of God in the extension of the Christian Religion, and in the promotion of true virtue and piety among men; that the discipline of the mind in all its noble faculties is, and should be deemed next in importance; and that in subservience to these paramount ends, the several branches of useful knowledge, above mentioned, should be assiduously cultivated. Accordingly, I hereby ordain and require, that the School Exercises of each day shall be opened and closed with the reading of the Scriptures and prayer; that at some convenient and suitable hour of each week, an Exercise in the Bible, either a Lecture or Recitation, as may be thought best, shall be held for the benefit of the whole school; that by precept and example, the Teachers shall encourage the pupils in holding occasional meetings for social, religious worship; and that at other times and in other ways, they shall take frequent opportunities to impart moral and religious instruction to the members of the Seminary. And that all these efforts may not be thwarted by the influence of bad members, it is proper and indispensable that great pains be taken, both by Trustees and Teachers, for the prompt removal, by private dismission or public expulsion, as the case may require, of any incorrigibly indolent, disorderly, profane, or otherwise vicious youth from all connection with the Seminary.

The Institution thus constituted by its founder, was organized, mainly, by Rev. Luther Wright, its first Principal, who was consulted by Mr. Williston, from the first inception of the plan. Prof. Wright graduated at Yale College, in 1822—was Tutor there for several years. In 1830, he took charge of Leceister Academy, Mass., which he raised from a depressed condition to one of the most flourishing academies of New England. Mr. Wright built up the reputation of Williston Seminary from the start, on the solid foundation of requiring from his pupils hard study and strict discipline; and when he retired from the school, from impaired health, in 1846, he left this new Seminary second to none other in New England, for the thoroughness of its teaching.

According to the Fourteenth Annual Catalogue, (1854-55,) there were 180 pupils in the classical department, of whom 33 were females, and 163 in the English department, of whom 55 were females.

The present Principal is JOSIAH CLARK, M. A.

XII. SUBJECTS AND METHODS OF INSTRUCTION IN MATHEMATICS;

AS PRESCRIBED FOR ADMISSION TO THE POLYTECHNIC SCHOOL OF PARIS.

BY W. M. GILLESPIE,

Professor of Civil Engineering in Union College.

[Concluded from the May number.]

III. ALGEBRA.

ALGEBRA is not, as are Arithmetic and Geometry, indispensable to every one. It should be very sparingly introduced into the general education of youth, and we would there willingly dispense with it entirely, excepting logarithms, if this would benefit the study of arithmetic and geometry. The programme of it which we are now to give, considers it purely in view of its utility to engineers, and we will carefully eliminate every thing not necessary for them.

Algebraical calculation presents no serious difficulty, when its students become well impressed with this idea, that every letter represents a number; and particularly when the consideration of negative quantities is not brought in at the outset and in an absolute manner. These quantities and their properties should not be introduced except as the solution of questions by means of equations causes their necessity to be felt, either for generalizing the rules of calculation, or for extending the meaning of the formulas to which it leads. CLAIRAUT pursues this course. He says, "I treat of the multiplication of negative quantities, that dangerous shoal for both scholars and teachers, only after having shown its necessity to the learner, by giving him a problem in which he has to consider negative quantities independently of any positive quantities from which they are subtracted. When I have arrived at that point in the problem where I have to multiply or divide negative quantities by one another, I take the course which was undoubtedly taken by the first analysts who have had those operations to perform and who have wished to follow a perfectly sure route: I seek for a solution of the problem which does not involve these operations; I thus arrive at the result by reasonings which admit of no doubt, and I thus see what those products or quotients of negative quantities, which had given me the first solution, must be." Bézout proceeds in the same way.

We recommend to teachers to follow these examples; not to speak to their pupils about negative quantities till the necessity of it is felt, and

when they have become familiar with algebraic calculation; and above all not to lose precious time in obscure discussions and demonstrations, which the best theory will never teach students so well as numerous applications.

It has been customary to take up again, in algebra, the calculus of fractions, so as to generalize the explanations given in arithmetic, since the terms of literal fractions may be any quantities whatsoever. Rigorously, this may be well, but to save time we omit this, thinking it better to employ this time in advancing and exercising the mind on new truths, rather than in returning continually to rules already given, in order to imprint a new degree of rigor on their demonstration, or to give them an extension of which no one doubts.

The study of numerical equations of the first degree, with one or several unknown quantities, must be made with great care. We have required the solution of these equations to be made by the method of *substitution*. We have done this, not only because this method really comprehends the others, particularly that of *comparison*, but for this farther reason. In treatises on algebra, those equations alone are considered whose numerical coefficients and solutions are very simple numbers. It then makes very little difference what method is used, or in what order the unknown quantities are eliminated. But it is a very different thing in practice, where the coefficients are complicated numbers, given with decimal parts, and where the numerical values of these coefficients may be very different in the same equation, some being very great and some very small. In such cases the method of *substitution* can alone be employed to advantage, and that with the precaution of taking the value of the unknown quantity to be eliminated from that equation in which it has relatively the greatest coefficient. Now the method of *comparison* is only the method of substitution put in a form in which these precautions cannot be observed, so that in practice it will give bad results with much labor.

The candidates must present to the examiners the complete calculations of the resolution of four equations with four unknown quantities, made with all the precision permitted by the logarithmic tables of Callet, and the proof that that precision has been obtained. The coefficients must contain decimals and be very different from one another, and the elimination must be effected with the above precautions.

The teaching of the present day disregards too much the applicability of the methods given, provided only that they be elegant in their form; so that they have to be abandoned and changed when the pupils enter on practice. This disdain of practical utility was not felt by our great mathematicians, who incessantly turned their attention towards applica-

tions. Thus the illustrious Lagrange made suggestions like those just given; and Laplace recommended the drawing of curves for solving directly all kinds of numerical equations.

As to literal equations of the first degree, we call for formulas sufficient for the resolution of equations of two or three unknown quantities. Bezout's method of elimination must be given as a first application of that fruitful method of indeterminates. The general discussion of formulas will be confined to the case of two unknown quantities. The discussion of three equations with three unknown quantities, x , y , and z , in which the terms independent of the unknown quantities are null, will be made directly, by this simple consideration that the system then really includes only two unknown quantities, to wit, the ratios of x and y , for example, to z .

The resolution of inequalities of the first degree with one or more unknown quantities, was added to equations of the first degree some years ago. We do not retain that addition.

The equations of the second degree, like the first, must be very carefully given. In dwelling on the case where the coefficient of x^2 converges towards zero, it will be remarked that, when the coefficient is very small, the ordinary formula would give one of the roots by the difference of two numbers almost equal; so that sufficient exactness could not be obtained without much labor. It must be shown how that inconvenience may be avoided.

It is common to meet with expressions of which the maximum or the minimum can be determined by the consideration of an equation of the second degree. We retain the study of them, especially for the benefit of those who will not have the opportunity of advancing to the general theory of maxima and minima.

The theory of the algebraic calculation of imaginary quantities, given *a priori*, may, on the contrary, be set aside without inconvenience. It is enough that the pupils know that the different powers of $\sqrt{-1}$ continually reproduce in turn one of these four values, $\pm 1, \pm \sqrt{-1}$. We will say as much of the calculation of the algebraic values of radicals, which is of no use. The calculation of their *arithmetical* values will alone be demanded. In this connection will be taught the notation of fractional exponents and that of negative exponents.

The theory of numbers has taken by degrees a disproportionate development in the examinations for admission; it is of no use in practice, and, besides, constitutes in the pure mathematics a science apart.

The theory of continued fractions at first seems more useful. It is employed in the resolution of algebraic equations, and in that of the ex-

ponential equation $a^x=b$. But these methods are entirely unsuited to practice, and we therefore omit this theory.

The theory of series, on the contrary, claims some farther developments. Series are continually met with in practice; they give the best solutions of many questions, and it is indispensable to know in what circumstances they can be safely employed.

We have so often insisted on the necessity of teaching students to calculate, as to justify the extent of the part of the programme relating to logarithms. We have suppressed the inapplicable method of determining logarithms by continued fractions, and have substituted the employment of the series which gives the logarithm of $n+1$, knowing that of n . To exercise the students in the calculation of the series, they should be made to determine the logarithms of the numbers from 1 to 10, from 101 to 110, and from 10,000 to 10,010, the object of these last being to show them with what rapidity the calculation proceeds when the numbers are large; the first term of the series is then sufficient, the variations of the logarithms being sensibly proportional to the variations of the numbers, within the limits of the necessary exactness. In the logarithmic calculations, the pupils will be exercised in judging of the exactness which they may have been able to obtain: the consideration of the numerical values of the proportional parts given in the tables is quite sufficient for this purpose, and is beside the only one which can be employed in practice.

The use of the sliding rule, which is merely an application of logarithms, gives a rapid and portable means of executing approximately a great number of calculations which do not require great exactness. We desire that the use of this little instrument should be made familiar to the candidates. This is asked for by all the professors of the "School of application," particularly those of Topography, of Artillery, of Construction, and of Applied Mechanics, who have been convinced by experience of the utility of this instrument, which has the greatest possible analogy with tables of logarithms.

Before entering on the subjects of higher algebra, it should be remembered that the reductions of the course which we have found to be so urgent, will be made chiefly on it. The general theory of equations has taken in the examinations an abnormal and improper development, not worth the time which it costs the students. We may add, that it is very rare to meet a numerical equation of a high degree requiring to be resolved, and that those who have to do this, take care not to seek its roots by the methods which they have been taught. These methods moreover are not applicable to transcendental equations, which are much more frequently found in practice.

The theory of the greatest common algebraic divisor, in its entire generality, is of no use, even in pure science, unless in the elimination between equations of any degree whatever. But this last subject being omitted, the greatest common divisor is likewise dispensed with.

It is usual in the general theory of algebraic equations to consider the derived polynomials of entire functions of x . These polynomials are in fact useful in several circumstances, and particularly in the theory of equal roots; and in analytical geometry, they serve for the discussion of curves and the determination of their tangents. But since transcendental curves are very often encountered in practice, we give in our programme the calculation of the derivatives of algebraic and fractional functions, and transcendental functions, logarithmic, exponential, and circular. This has been long called for, not only because it must be of great assistance in the teaching of analytical geometry, but also because it will facilitate the elementary study of the infinitesimal calculus.

We have not retrenched any of the general ideas on the composition of an entire polynomial by means of factors corresponding to its roots. We retain several theorems rather because they contain the germs of useful ideas than because of their practical utility, and therefore wish the examiners to restrict themselves scrupulously to the programme.

The essential point in practice is to be able to determine conveniently an incommensurable root of an algebraic or transcendental equation, when encountered. Let us consider first an algebraic equation.

All the methods which have for their object to separate the roots, or to approximate to them, begin with the substitution of the series of consecutive whole numbers, in the first member of the equation. The direct substitution becomes exceedingly complicated, when the numbers substituted become large. It may be much shortened, however, by deducing the results from one another by means of their differences, and guarding against any possibility of error, by verifying some of those results, those corresponding to the numbers easiest to substitute, such as ± 10 , ± 20 . The teacher should not fail to explain this to his pupils.

Still farther: let us suppose that we have to resolve an equation of the third degree, and that we have recognized by the preceding calculations the necessity of substituting, between the numbers 2 and 3, numbers differing by a tenth, either for the purpose of continuing to effect the separation of the roots, or to approximate nearer to a root comprised between 2 and 3. If we knew, for the result corresponding to the substitution of 2, the first, second, and third differences of the results of the new substitutions, we could thence deduce those results themselves with as much simplicity, as in the case of the whole numbers. The new third difference, for example, will be simply the thousandth part of the old

third difference. We may also remark that there is no possibility of error, since, the numbers being deduced from one another, when we in this way arrive at the result of the substitution of 3, which has already been calculated, the whole work will thus be verified.

Let us suppose again that we have thus recognized that the equation has a root comprised between 2.3 and 2.4; we will approximate still nearer by substituting intermediate numbers, differing by 0.01, and employing the course just prescribed. As soon as the third differences can be neglected, the calculation will be finished at once, by the consideration of an equation of the second degree; or, if it is preferred to continue the approximations till the second differences in their turn may be neglected, the calculation will then be finished by a simple proportion.

When, in a transcendental equation $f(X)=0$, we have substituted in $f(X)$ equidistant numbers, sufficiently near to each other to allow the differences of the results to be neglected, commencing with a certain order, the 4th, for example, we may, within certain limits of x , replace the transcendental function by an algebraic and entire function of x , and thus reduce the search for the roots of $f(X)=0$ to the preceding theory.

Whether the proposed equation be algebraic or transcendental, we can thus, when we have obtained one root of it with a suitable degree of exactness, continue the approximation by the method of Newton.

PROGRAMME OF ALGEBRA.

Algebraic calculation.

Addition and subtraction of polynomials.—Reduction of similar terms.

Multiplication of monomials.—Use of exponents.—Multiplication of polynomials.

Rule of the signs.—To arrange a polynomial.—Homogeneous polynomials.

Division of monomials. Exponent zero.—Division of polynomials. How to know if the operation will not terminate.—Division of polynomials when the dividend contains a letter which is not found in the divisor.

Equations of the first degree.

Resolution of numerical equations of the first degree with one or several unknown quantities by the method of substitution.—Verification of the values of the unknown quantities and of the degree of their exactness.

Of cases of impossibility or of indetermination.

Interpretation of negative values.—Use and calculation of negative quantities.

Investigation of general formulas for obtaining the values of the unknown quantities in a system of equations of the first degree with two or three unknown quantities.—Method of Bezout.—Complete discussion of these formulas for the case of two unknown quantities.—Symbols $\frac{m}{n}$ and $\frac{m}{n}$.

Discussion of three equations with three unknown quantities, in which the terms independent of the unknown quantities are null.

Equations of the second degree with one unknown quantity.

Calculus of radicals of the second degree.

Resolution of an equation of the second degree with one unknown quantity.—Double solution.—Imaginary values.

When, in the equation $ax^2+bx+c=0$, a converges towards 0, one of the roots increases indefinitely.—Numerical calculation of the two roots, when a is very small. Decomposition of the trinomial x^2+px+q into factors of the first degree.—Relations between the coefficients and the roots of the equation $x^2+px+q=0$.

Trinomial equations reducible to the second degree.
Of the maxima and minima which can be determined by equations of the second degree.

Calculation of the *arithmetical* values of radicals.

Fractional exponents.—Negative exponents.

Of series.

Geometrical progressions.—Summation of the terms.

What we call a series.—Convergence and divergence.

A geometrical progression is convergent, when the ratio is smaller than unity; diverging, when it is greater.

The terms of a series may decrease indefinitely and the series not be converging.

A series, all the terms of which are positive, is converging, when the ratio of one term to the preceding one tends towards a *limit* smaller than unity, in proportion as the index of the rank of that term increases indefinitely.—The series is diverging when this *limit* is greater than unity. There is uncertainty when it is equal to unity.

In general, when the terms of a series decrease indefinitely, and are alternately positive and negative, the series is converging.

Combinations, arrangements, and permutations of m letters, when each combination must not contain the same letter twice.

Development of the entire and positive powers of a binomial.—General terms.

Development of $(a + b\sqrt{-1})^n$.

Limit towards which $(1 + \frac{1}{n})^m$ tends, when m increases indefinitely.

Summation of piles of balls.

Of logarithms and of their uses.

All numbers can be produced by forming all the powers of any positive number, greater or less than one.

General properties of logarithms.

When numbers are in geometrical progression, their logarithms are in arithmetical progression.

How to pass from one system of logarithms to another system.

Calculation of logarithms by means of the series which gives the logarithm of $a+1$, knowing that of a .—Calculation of Napierian logarithms.—To deduce from them those of Briggs. Modulus.

Use of logarithms whose base is 10.—Characteristics.—Negative characteristics. Logarithms entirely negative are not used in calculation.

A number being given, how to find its logarithm in the tables of Callet. A logarithm being given, how to find the number to which it belongs.—Use of the proportional parts.—Their application to appreciate the exactness for which we can answer.

Employment of the sliding rule.

Resolution of exponential equations by means of logarithms.

Compound interest. Annuities.

Derived functions.

Development of an entire function $F(x+h)$ of the binomial $(x+h)$.—Derivative of an entire function.—To return from the derivative to the function.

The derivative of a function of x is the limit towards which tends the ratio of the increment of the function to the increment h of the variable, in proportion as h tends towards zero.

Derivatives of trigonometric functions.

Derivatives of exponentials and of logarithms.

Rules to find the derivative of a sum, of a product, of a power, of a quotient of functions of x , the derivatives of which are known.

Of the numerical resolution of equations.

Changes experienced by an entire function $f(x)$ when x varies in a continuous manner.—When two numbers a and b substituted in an entire function $f(x)$ give results with contrary signs, the equation $f(x) = 0$ has at least one real root not comprised between a and b . This property subsists for every species of function which remains continuous for all the values of x comprised between a and b .

An algebraic equation of uneven degree has at least one real root.—An algebraic equation of even degree, whose last term is negative, has at least two real roots.

Every equation $f(x) = 0$, with coefficients either real or imaginary of the form $a + b\sqrt{-1}$, admits of a real or imaginary root of the same form. [Only the enunciation, and not the demonstration of this theorem, is required.]

If a is a root of an algebraic equation, the first member is divisible by $x-a$. An algebraic equation of the m^{th} degree has always m roots real or imaginary, and it cannot admit more.—Decomposition of the first members into factors of the first degree. Relations between the coefficients of an algebraic equation and its roots.

When an algebraic equation whose coefficients are real, admits an imaginary root of the form $a+b\sqrt{-1}$, it has also for a root the conjugate expression $a-b\sqrt{-1}$.

In an algebraic expression, complete or incomplete, the number of the positive roots cannot surpass the number of the variations; consequence, for negative roots.

Investigation of the product of the factors of the first degree common to two entire functions of x .—Determination of the roots common to two equations, the first members of which are entire functions of the unknown quantity.

By what character to recognize that an algebraic equation has equal roots.—How we then bring its resolution to that of several others of lower degree and of unequal roots.

Investigation of the commensurable roots of an algebraic equation with entire coefficients.

When a series of equidistant numbers is substituted in an entire function of the m^{th} degree, and differences of different orders between the results are formed, the differences of the m^{th} order are constant.

Application to the separation of the roots of an equation of the third degree.—Having the results of the substitution of -1 , 0 , and $+1$, to deduce therefrom, by means of differences, those of all other whole numbers, positive or negative.—The progress of the calculation leads of itself to the limits of the roots.—Graphical representation of this method.

Substitution of numbers equidistant by a tenth, between two consecutive whole numbers, when the inspection of the first results has shown its necessity.—This substitution is effected directly, or by means of new differences deduced from the preceding.

How to determine, in continuing the approximation towards a root, at what moment the consideration of the first difference is sufficient to give that root with all desirable exactness, by a simple proportion.

The preceding method becomes applicable to the investigation of the roots of a transcendental equation $X=0$, when there have been substituted in the first member, numbers equidistant and sufficiently near to allow the differences of the results to be considered as constant, starting from a certain order.—Formulas of interpolation.

Having obtained a root of an algebraic or transcendental equation, with a certain degree of approximation, to approximate still farther by the method of Newton.

Resolution of two numerical equations of the second degree with two unknown quantities.

Decomposition of rational fractions into simple fractions.

IV. TRIGONOMETRY.

In explaining the use of trigonometrical tables, the pupil must be able to tell with what degree of exactness an angle can be determined by the logarithms of any of its trigonometrical lines. The consideration of the proportional parts will be sufficient for this. It will thus be seen that if the *sine* determines perfectly a small angle, the degree of exactness, which may be expected from the use of that line, diminishes as the angle increases, and becomes quite insufficient in the neighborhood of 90 degrees. It is the reverse for the *cosine*, which may serve very well to represent an angle near 90 degrees, while it would be very inexact for small angles. We see, then, that in our applications, we should distrust those formulas which give an angle by its sine or cosine. The *tangent*

being alone exempt from these difficulties, we should seek, as far as possible, to resolve all questions by means of it. Thus, let us suppose that we know the hypotenuse and one of the sides of a right-angled triangle, the direct determination of the included angle will be given by a cosine, which will be wanting in exactness if the hypotenuse of the triangle does not differ much from the given side. In that case we should begin by calculating the third side, and then use it with the first side to determine the desired angle by means of its tangent. When two sides of a triangle and the included angle are given, the tangent of the half difference of the desired angles may be calculated with advantage; but we may also separately determine the tangent of each of them. When the three sides of a triangle are given, the best formula for calculating an angle, and the only one never at fault, is that which gives the tangent of half of it.

The surveying for plans, taught in the course of Geometry, employing only graphical methods of calculation, did not need any more accurate instruments than the chain and the graphometer; but now that trigonometry furnishes more accurate methods of calculation, the measurements on the ground require more precision. Hence the requirement for the pupil to measure carefully a base, to use telescopes, verniers, etc., and to make the necessary calculations, the ground being still considered as plane. But as these slow and laborious methods can be employed for only the principal points of the survey, the more expeditious means of the plane-table and compass will be used for the details.

In spherical trigonometry, all that will be needed in geodesy should be learned before admission to the school, so that the subject will not need to be again taken up. We have specially inscribed in the programme the relations between the angles and sides of a right-angled triangle, which must be known by the students; they are those which occur in practice. In tracing the course to be pursued in the resolution of the three cases of any triangles, we have indicated that which is in fact employed in the applications, and which is the most convenient. As to the rest, ambiguous cases never occur in practice, and therefore we should take care not to speak of them to learners.

In surveying, spherical trigonometry will now allow us to consider cases in which the signals are not all in the same plane, and to operate on uneven ground, obtain its projection on the plane of the horizon, and at the same time determine differences of level.

It may be remarked that Descriptive Geometry might supply the place of spherical trigonometry by a graphical construction, but the degree of exactitude of the differences of level thus obtained would be insufficient.

PROGRAMME OF TRIGONOMETRY.

1. PLANE TRIGONOMETRY.

Trigonometrical lines.—Their ratios to the radius are alone considered.—Relations of the trigonometric lines of the same angle.—Expressions of the sine and of the cosine in functions of the tangent.

Knowing the sines and the cosines of two arcs a and b , to find the sine and the cosine of their sum and of their difference.—To find the tangent of the sum or of the difference of two arcs, knowing the tangents of those arcs.

Expressions for $\sin. 2a$ and $\sin. 3a$; $\cos. 2a$ and $\cos. 3a$; $\tan. 2a$ and $\tan. 3a$.

Knowing $\sin. a$ or $\cos. a$, to calculate $\sin. \frac{1}{2}a$ and $\cos. \frac{1}{2}a$.

Knowing $\tan. a$, to calculate $\tan. \frac{1}{2}a$.

Knowing $\sin. a$, to calculate $\sin. \frac{1}{2}a$.—Knowing $\cos. a$, to calculate $\cos. \frac{1}{2}a$.

Use of the formula $\cos. p + \cos. q = 2 \cos. \frac{1}{2}(p+q) \cos. \frac{1}{2}(p-q)$, to render logarithms applicable to the sum of two trigonometrical lines, sines or cosines.—To render logarithms applicable to the sum of two tangents.

Construction of the trigonometric tables.

Use in detail of the tables of Callet.—Appreciation, by the proportional parts, of the degree of exactness in the calculation of the angles.—Superiority of the tangent formulas.

Resolution of triangles.

Relations between the angles and the sides of a right-angled triangle, or of any triangle whatever.—When the three angles of a triangle are given, these relations determine only the ratios of the sides.

Resolution of right-angled triangles.—Of the case in which the hypotenuse and a side nearly equal to it are given.

Knowing a side and two angles of any triangle, to find the other parts, and also the surface of the triangle.

Knowing two sides a and b of a triangle and the included angle C , to find the other parts and also the surface of the triangle.—The $\tan. \frac{1}{2}(A-B)$ may be determined; or $\tan. A$ and $\tan. B$ directly.

Knowing the three sides a, b, c , to find the angles and the surface of the triangle.—Employment of the formula which gives $\tan. \frac{1}{2}A$.

Application to surveying for plans.

Measurement of bases with rods.

Measurement of angles.—Description and use of the circle.—Use of the telescope to render the line of sight more precise.—Division of the circle.—Verniers.

Measurement and calculation of a system of triangles.—Reduction of angles to the centres of stations.

How to connect the secondary points to the principal system.—Use of the plane table and of the compass.

2. SPHERICAL TRIGONOMETRY.

Fundamental relations ($\cos. a = \cos. b \cos. c + \sin. b \sin. c \cos. A$) between the sides and the angles of a spherical triangle.

To deduce thence the relations $\sin. A : \sin. B = \sin. a : \sin. b$; $\cot. a \sin. b - \cot. A \sin. C = \cos. b \cos. C$, and by the consideration of the supplementary triangle $\cos. A = -\cos. B \cos. C + \sin. B \sin. C \cos. a$.

Right-angled triangles.—Formulas $\cos. a = \cos. b \cos. c$; $\sin. b = \sin. a \sin. B$; $\tan. c = \tan. a \cos. B$, and $\tan. b = \sin. c \tan. B$.

In a right-angled triangle the three sides are less than 90° , or else two of the sides are greater than 90° , and the third is less. An angle and the side opposite to it are both less than 90° , or both greater.

Resolution of any triangles whatever:

1^o Having given their three sides a, b, c , or their three angles A, B, C .—Formulas $\tan. \frac{1}{2}a$, and $\tan. \frac{1}{2}A$, calculable by logarithms:

2^o Having given two sides and the included angle, or two angles and the included side.—Formulas of Delambre:

3^o Having given two sides and an angle opposite to one of them, or two angles and a side opposite to one of them. Employment of an auxiliary angle to render the formulas calculable by logarithms.

Applications.—Survey of a mountainous country.—Reduction of the base and of the angles to the horizon.—Determination of differences of level.

Knowing the latitude and the longitude of two points on the surface of the earth, to find the distance of those points.

V. ANALYTICAL GEOMETRY.

The important property of homogeneity must be given with clearness and simplicity.

The transformation of co-ordinates must receive some numerical applications, which are indispensable to make the student clearly see the meaning of the formulas.

The determination of tangents will be effected in the most general manner by means of the derivatives of the various functions, which we inserted in the programme of algebra. After having shown that this determination depends on the calculation of the derivative of the ordinate with respect to the abscissa, this will be used to simplify the investigation of the tangent to curves of the second degree and to curves whose equations contain transcendental functions. The discussion of these, formerly pursued by laborious indirect methods, will now become easy; and as curves with transcendental equations are frequently encountered, it will be well to exercise students in their discussion.

The properties of foci and of the directrices of curves of the second degree will be established directly, for each of the three curves, by means of the simplest equations of these curves, and without any consideration of the analytical properties of foci, with respect to the general equation of the second degree. With even greater reason will we dispense with examining whether curves of higher degree have foci, a question whose meaning even is not well defined.

We retained in algebra the elimination between two equations of the second degree with two unknown quantities, a problem which corresponds to the purely analytical investigation of the co-ordinates of the points of intersection of two curves of the second degree. The final equation is in general of the fourth degree, but we may sometimes dispense with calculating that equation. A graphical construction of the curves, carefully made, will in fact be sufficient to make known, approximately, the co-ordinates of each of the points of intersection; and when we shall have thus obtained an approximate solution, we will often be able to give it all the numerical rigor desirable, by successive approximations, deduced from the equations. These considerations will be extended to the investigation of the real roots of equations of any form whatever with one unknown quantity.

Analytical geometry of three dimensions was formerly entirely taught within the Polytechnic school, none of it being reserved for the course of admission. For some years past, however, candidates were required to know the equations of the right line in space, the equation of the plane, the solution of the problems which relate to it and the transfor-

mation of co-ordinates. But the consideration of surfaces of the second order was reserved for the interior teaching. We think it well to place this also among the studies to be mastered before admission, in accordance with the general principle now sought to be realized, of classing with them that double instruction which does not exact a previous knowledge of the differential calculus.

We have not, however, inserted here all the properties of surfaces of the second order, but have retained only those which it is indispensable to know and to retain. The transformation of rectilinear co-ordinates, for example, must be executed with simplicity, and the teacher must restrict himself to giving his pupils a succinct explanation of the course to be pursued; this will suffice to them for the very rare cases in which they may happen to have need of them. No questions will be asked relating to the general considerations, which require very complicated theoretical discussions, and especially that of the general reduction of the equation of the second degree with three variables. We have omitted from the problems relating to the right line and to the plane, the determination of the shortest distance of two right lines.

The properties of surfaces of the second order will be deduced from the equations of those surfaces, taken directly in the simplest forms. Among these properties, we place in the first rank, for their valuable applications, those of the surfaces which can be generated by the movement of a right line.

PROGRAMME OF ANALYTICAL GEOMETRY.

1. GEOMETRY OF TWO DIMENSIONS.

Rectilinear co-ordinates.—Position of a point on a plane.

Representation of geometric loci by equations.

Homogeneity of equations and of formulas.—Construction of algebraic expressions.

Transformation of rectilinear co-ordinates.

Construction of equations of the first degree.—Problems on the right line.

Construction of equations of the second degree.—Division of the curves which they represent into three classes.—Reduction of the equation to its simplest form by the change of co-ordinates.*

Problem of tangents.—The coefficient of inclination of the tangent to the curve, to the axis of the abscissas, is equal to the derivative of the ordinate with respect to the abscissa.

Of the ellipse.

Centre and axes.—The squares of the ordinates perpendicular to one of the axes are to each other as the products of the corresponding segments formed on that axis.

The ordinates perpendicular to the major axis are to the corresponding ordinates of the circle described on that axis as a diameter, in the constant ratio of the minor axis to the major.—Construction of the curve by points, by means of this property.

Foci; eccentricity of the ellipse.—The sum of the radii vectors drawn to any point of the ellipse is constant and equal to the major axis.—Description of the ellipse by means of this property.

* The students will apply these reductions to a numerical equation of the second degree, and will determine the situation of the new axes with respect to the original axes, by means of trigonometrical tables. They will show to the examiner the complete calculations of this reduction and the trace of the two systems of axes and of the curves.

Directrices.—The distance from each point of the ellipse to one of the foci, and to the directrix adjacent to that focus, are to each other as the eccentricity is to the major axis.

Equations of the tangent and of the normal at any point of the ellipse.*—The point in which the tangent meets one of the axes prolonged is independent of the length of the other axis.—Construction of the tangent at any point of the ellipse by means of this property.

The radii vectores, drawn from the foci to any point of the ellipse, make equal angles with the tangent at that point or the same side of it.—The normal bisects the angle made by the radii vectores with each other.—This property may serve to draw a tangent to the ellipse through a point on the curve, or through a point exterior to it.

The diameters of the ellipse are right lines passing through the centre of the curve.—The chords which a diameter bisects are parallel to the tangent drawn through the extremity of that diameter.—Supplementary chords. By means of them a tangent to the ellipse can be drawn through a given point on that curve or parallel to a given right line.

Conjugate diameters.—Two conjugate diameters are always parallel to supplementary chords, and reciprocally.—Limit of the angle of two conjugate diameters.—An ellipse always contains two equal conjugate diameters.—The sum of the squares of two conjugate diameters is constant.—The area of the parallelogram constructed on two conjugate diameters is constant.—To construct an ellipse, knowing two conjugate diameters and the angle which they make with each other.

Expression of the area of an ellipse in function of its axes.

Of the hyperbola.

Centre and axes.—Ratio of the squares of the ordinates perpendicular to the transverse axes.

Of foci and of directrices; of the tangent and of the normal; of diameters and of supplementary chords.—Properties of these points and of these lines, analogous to those which they possess in the ellipse.

Asymptotes of the hyperbola.—The asymptotes coincide with the diagonals of the parallelogram formed on any two conjugate diameters.—The portions of a secant comprised between the hyperbola and its asymptotes are equal.—Application to the tangent and to its construction.

The rectangle of the parts of a secant, comprised between a point of the curve and the asymptotes, is equal to the square of half of the diameter to which the secant is parallel.

Form of the equation of the hyperbola referred to its asymptotes.

Of the parabola.

Axis of the parabola.—Ratio of the squares of the ordinates perpendicular to the axis.

Focus and directrix of the parabola.—Every point of the curve is equally distant from the focus and from the directrix.—Construction of the parabola.

The parabola may be considered as an ellipse, in which the major axis is indefinitely increased while the distance from one focus to the adjacent summit remains constant.

Equations of the tangent and of the normal.—Sub-tangent and sub-normal. They furnish means of drawing a tangent at any point of the curve.

The tangent makes equal angles with the axis and with the radius vector drawn to the point of contact.—To draw, by means of this property, a tangent to the parabola, 1^o through a point on the curve; 2^o through an exterior point.

All the diameters of the parabola are right lines parallel to the axis, and reciprocally.—The chords which a diameter bisects are parallel to the tangent drawn at the extremity of that diameter.

Expression of the area of a parabolic segment.

Polar co-ordinates.—To pass from a system of rectilinear and rectangular co-ordinates to a system of polar co-ordinates, and reciprocally.

Polar equations of the three curves of the second order, the pole being situated at a focus, and the angles being reckoned from the axis which passes through that focus.

Summary discussion of some transcendental curves.—Determination of the tangent at one of their points.

Construction of the real roots of equations of any form with one unknown quantity.—Investigation of the intersections of two curves of the second degree.—Numerical applications of these formulas.

* They will be deduced from the property, previously demonstrated, of the derivative of the ordinate with respect to the abscissa.

2. GEOMETRY OF THREE DIMENSIONS.

The sum of the projections of several consecutive right lines upon an axis is equal to the projection of the resulting line.—The sum of the projections of a right line on three rectangular axes is equal to the square of the right line.—The sum of the squares of the cosines of the angles which a right line makes with three rectangular right lines is equal to unity.

The projection of a plane area on a plane is equal to the product of that area by the cosine of the angle of the two planes.

Representation of a point by its co-ordinates.—Equations of lines and of surfaces.

Transformation of rectilinear co-ordinates.

Of the right line and of the plane.

Equations of the right line.—Equation of the plane.

To find the equations of a right line, 1° which passes through two given points, 2° which passes through a given point and which is parallel to a given line.

To determine the point of intersection of two right lines whose equations are known.

To pass a plane, 1° through three given points; 2° through a given point and parallel to a given plane; 3° through a point and through a given right line.

Knowing the equations of two planes, to find the projections of their intersection.

To find the intersection of a right line and of a plane, their equations being known.

Knowing the co-ordinates of two points, to find their distance.

From a given point to let fall a perpendicular on a plane; to find the foot and the length of that perpendicular (rectangular co-ordinates).

Through a given point to pass a plane perpendicular to a given right line (rectangular co-ordinates).

Through a given point, to pass a perpendicular to a given right line; to determine the foot and the length of that perpendicular (rectangular co-ordinates).

Knowing the equations of a right line, to determine the angles which that line makes with the axes of the co-ordinates (rectangular co-ordinates).

To find the angle of two right lines whose equations are known (rectangular co-ordinates).

Knowing the equation of a plane, to find the angles which it makes with the co-ordinate planes (rectangular co-ordinates).

To determine the angle of two planes (rectangular co-ordinates).

To find the angle of a right line and of a plane (rectangular co-ordinates).

Surfaces of the second degree.

They are divided into two classes; one class having a centre, the other not having any. Co-ordinates of the centre.

Of diametric planes.

Simplification of the general equation of the second degree by the transformation of co-ordinates.

The simplest equations of the ellipsoid, of the hyperboloid of one sheet and of two sheets, of the elliptical and the hyperbolic paraboloid, of cones and of cylinders of the second order.

Nature of the plane sections of surfaces of the second order.—Plane sections of the cone, and of the right cylinder with circular base.—Anti-parallel section of the oblique cone with circular base.

Cone asymptote to an hyperboloid.

Right-lined sections of the hyperboloid of one sheet.—Through each point of a hyperboloid of one sheet two right lines can be drawn, whence result two systems of right-lined generatrices of the hyperboloid.—Two right lines taken in the same system do not meet, and two right lines of different systems always meet.—All the right lines situated on the hyperboloid being transported to the centre, remaining parallel to themselves, coincide with the surface of the asymptote cone.—Three right lines of the same system are never parallel to the same plane.—The hyperboloid of one sheet may be generated by a right line which moves along three fixed right lines, not parallel to the same plane; and, reciprocally, when a right line slides on three fixed lines, not parallel to the same plane, it generates a hyperboloid of one sheet.

Right-lined sections of the hyperbolic paraboloid.—Through each point of the surface of the hyperbolic paraboloid two right lines may be traced, whence results the generation of the paraboloid by two systems of right lines.—Two right lines of the same system do not meet, but two right lines of different systems always meet.—All the right lines of the same system are parallel to the same plane.—The hyperbolic paraboloid may be generated by the movement of a right line which slides on three fixed right lines which are parallel to the same plane; or by a right line which slides on two fixed right lines, itself remaining always parallel to a given plane. Reciprocally, every surface resulting from one of these two modes of generation is a hyperbolic paraboloid.

General equations of conical surfaces and of cylindrical surfaces.

VI. DESCRIPTIVE GEOMETRY.

The general methods of Descriptive Geometry,—their uses in Stone-cutting and Carpentry, in Linear Perspective, and in the determination of the Shadows of bodies,—constitute one of the most fruitful branches of the applications of mathematics. The course has always been given at the Polytechnic School with particular care, according to the plans traced by the illustrious *Monge*, but no part of the subject has heretofore been required for admission. The time given to it in the school, being however complained of on all sides as insufficient for its great extent and important applications, the general methods of Descriptive Geometry will henceforth be retrenched from the internal course, and be required of all candidates for admission.

As to the programme itself, it is needless to say any thing, for it was established by *Monge*, and the extent which he gave to it, as well as the methods which he had created, have thus far been maintained. We merely suppress the construction of the shortest distance between two right lines, which presents a disagreeable and useless complication.

Candidates will have to present to the examiner a collection of their graphical constructions (*épure*s) of all the questions of the programme, signed by their teacher. They are farther required to make free-hand sketches of five of their *épure*s.

PROGRAMME OF DESCRIPTIVE GEOMETRY.

*Problems relating to the point, to the straight line, and to the plane.**

Through a point given in space, to pass a right line parallel to a given right line, and to find the length of a part of that right line.

Through a given point, to pass a plane parallel to a given plane.

To construct the plane which passes through three points given in space.

Two planes being given, to find the projections of their intersection.

A right line and a plane being given, to find the projections of the point in which the right line meets the plane.

Through a given point, to pass a perpendicular to a given plane, and to construct the projections of the point of meeting of the right line and of the plane.

Through a given point, to pass a right line perpendicular to a given right line, and to construct the projections of the point of meeting of the two right lines.

A plane being given, to find the angles which it forms with the planes of projection.

Two planes being given, to construct the angle which they form between them.

Two right lines which cut each other being given, to construct the angle which they form between them.

To construct the angle formed by a right line and by a plane given in position in space.

Problems relating to tangent planes.

To draw a plane tangent to a cylindrical surface or to a conical surface, 1° through a point taken on the surface; 2° through a point taken out of the surface; 3° parallel to a given right line.

Through a point taken on a surface of revolution, whose meridian is known, to pass a plane tangent to that surface.

* The method of the change of the planes of projection will be used for the resolution of these problems.

Problems relating to the intersection of surfaces.

To construct the section made, on the surface of a right and vertical cylinder, by a plane perpendicular to one of the planes of projection.—To draw the tangent to the curve of intersection.—To make the development of the cylindrical surface, and to refer to it the curve of intersection, and also the tangent.

To construct the intersection of a right cone by a plane perpendicular to one of the planes of projection. Development and tangent.

To construct the right section of an oblique cylinder.—To draw the tangent to the curve of intersection. To make the development of the cylindrical surface, and to refer to it the curve which served as its base, and also its tangents.

To construct the intersection of a surface of revolution by a plane, and the tangents to the curve of intersection.—To resolve this question, when the generating line is a right line which does not meet the axis.

To construct the intersection of two cylindrical surfaces, and the tangents to that curve.

To construct the intersection of two oblique cones, and the tangents to that curve.

To construct the intersection of two surfaces of revolution whose axes meet.

VII. OTHER REQUIREMENTS.

The preceding six heads complete the outline of the elementary course of mathematical instruction which it was the object of this article to present; but a few more lines may well be given to a mere enumeration of the other requirements for admission to the school.

MECHANICS comes next. The programme is arranged under these heads: Simple motion and compound motion; Inertia; Forces applied to a free material point; Work of forces applied to a movable point; Forces applied to a solid body; Machines.

PHYSICS comprises these topics: General properties of bodies; Hydrostatics and hydraulics; Densities of solids and liquids; Properties of gases; Heat; Steam; Electricity; Magnetism; Acoustics; Light.

CHEMISTRY treats of Oxygen; Hydrogen; Combinations of hydrogen with oxygen; Azote or nitrogen; Combinations of azote with oxygen; Combination of azote with hydrogen, or ammonia; Sulphur; Chlorine; Phosphorus; Carbon.

COSMOGRAPHY describes the Stars; the Earth; the Sun; the Moon; the Planets; Comets; the Tides.

HISTORY and GEOGRAPHY treat of Europe from the Roman Empire to the accession of Louis XVI.

GERMAN must be known sufficiently for it to be translated, spoken a little, and written in its own characters.

DRAWING, besides the *épures* of descriptive geometry, must have been acquired sufficiently for copying an academic study, and shading in pencil and in India ink.

Will not our readers agree with M. Coriolis, that "*There are very few learned mathematicians who could answer perfectly well at an examination for admission to the Polytechnic School*"?

XIII. MODERN GREEK LANGUAGE.

BY S. G. HOWE.

THE importance of the study of the ancient Greek language, has been set forth in this Journal. Valuable hints and suggestions upon the subject are to be found in Prof. Lewis' articles in the preceding volume.

Our object now is to show how new interest and importance may be given to the study of the language and literature of the old Greeks, by connecting it with the study of the language and the literature of the modern Greeks. For which, Prof. Felton has given increased facilities by the publication of a volume of Selections from their best writers.*

In our utilitarian age and country, there is a growing prejudice against the study of the Greek and Latin, partly because a knowledge of those languages is difficult to be attained; partly because some regard it as a sort of aristocratic accomplishment; partly because others think that the time spent in attaining it might be better spent in something else; but mainly because very few know anything about the matter. The popular misnomer of *dead language* as applied to Greek, is proof of this. The language is not dead, and probably never will be. The Greeks of to-day can read Homer more easily than we can read Chaucer; and they can read Xenophon about as easily as we read Spencer. But suppose they could not. Suppose, indeed, there were no living Greeks, would the old Greek language be dead? Not in any just sense. We have hundreds of aspirants for immortality in every branch of literature, and they have their respective thousands of admirers, who believe their reputations will win in the race against time; but we will back old Homer against any living poet, Aristotle against any philosopher, Socrates against any moralist, Demosthenes against any orator; we will give to their living rival two thousand years the start, and feel sure that they will be beaten, and left out of sight in ages, when the names and work of the ancients will be as fresh and green as they are now.

But taking it for granted that an intimate knowledge of the Greek will always be sought by those who aspire to high scholar-

* Selections from modern Greek writers in Prose and Poetry, with notes by C. C. Felton, LL. D. Eliot Professor of Greek in Harvard University.
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ship, and that the study of it will not be banished from our high seminaries, we would urge a few considerations in favor of having the language taught in such a manner that it will be in no sense a dead language; to wit, in connection with the spoken and written language of several millions of living men.

This can be done without much additional study, and when done may become very useful by opening to the student the living language of the most active and intelligent people of the East; a people who have their universities, their gymnasia, and their common schools, their periodicals, and their newspapers; and who are fast building up a literature which shows them to be worthy descendants of their illustrious ancestors.

The political revolution which the Greeks recently effected so completely, is not the only one which they have attempted. They have aimed also at effecting an equally remarkable revolution in their national language, by driving out all foreign words and phrases which their conquerors, especially the Italians and Turks had left; by correcting grammatical corruptions, and by bringing it back as nearly as possible to its old condition of most beautiful, flexible, and expressive language yet contrived by man.

This attempt was certainly as remarkable as it was bold. We know no other instance in history where a people, or race, has consciously and purposely undertaken such a task. Such changes in language are usually made slowly and unconsciously; but the Greeks went to work earnestly, purposely, and almost unanimously. It was not merely the work of scholars; they could have done nothing alone; but the people, who clung to the memory of their high descent, who always persisted in calling their boys Pericles, and Socrates, and Leonidas, and their girls Aspasia, and Helena, and Penelope,—the common people seconded the scholars in the high attempt, and set about discarding what they understood to be foreign words, and using native ones with an eagerness which would have seemed puerile and useless, if its purpose had not been so good, and its success so remarkable.

This redemption of a language is such an extraordinary thing, that it is worth notice.

The natural brotherhood of man is shown in the tendency to a common form of speech which is manifested as soon as social relations are established. So surely as men of different nations come into relation with each other, even if it be relations of war, so surely do they begin to form a common language. Their leaders bring them together as enemies, but they soon form relations as friends.

We saw the beginning of the process of assimilation of languages when our army in Mexico sent home among the worthless spoils of war, such words as *vamos*, *ranchos*, *fillibuster*, and the like. This process however goes on most rapidly in countries conquered and occupied by strangers. The strangers usually impose even their language upon the natives. Greece was conquered and occupied for ages by Romans, by barbarians, by French, by Venitians, by Turks, and each left as bad legacies, broken bits of speech, until the colloquial language of the country became a curious mosaic, of which the ground work, however, was still the old Greek.

Space permits not mention of all the causes which have saved the language from utter loss. The main ones are, first, the strong *nationality* of the race which repelled social intercourse, and checked intermarriage; and which demanded and obtained for the people the right of administering their own municipal affairs. Even under the Turks, many a Greek village elected its own *Δμιογεροντες*,—its Selectmen, who collected the tribute from the Pashas, and who had considerable power. Many villages especially in the mountain regions, had never been entered by the conqueror.

Second, the preservation of the Greek Church. This with all its mummeries, and its absurdities, has been of immense advantage. In the quiet and secluded monasteries, was many a copy of the old classics, and many a monk to pore over them; while the priests repeated the church ritual, and the prayers in good Greek, century after century, in thousands of little chapels; for even while the crescent shone over every large town, and upon every fortress wall, the cross stood meekly in the villages and hamlets of the plains, and up in the green nooks among the mountains.

By these, and other means, a knowledge of, and even familiarity with the old Greek was kept up in Greece. The standard still existed.

Early in this century, and long before the revolt of the country against Turkey, there was a manifest revival of Greek literature, which was fostered by the Greek merchants who had settled and grown rich in Europe, especially in the southern part of Russia. Several presses were established, and books were printed in the modern Greek language. Their authors aimed at elevating the style, and bringing back the language toward its old type. Prominent among these was Corais, whose singular merit and virtues did not escape the eagle eye of Napoleon. Encouraged and aided by the French government, he established himself at Paris, and not only issued many valuable

works written in a style which still serves as a model, but he greatly encouraged native Greek writers elsewhere.

When the political revolution was effected, the Greeks with singular unanimity, turned their attention to the preservation of all the relics of their glorious ancestry. Among the first laws passed was one erecting a national museum of antiquities, to be kept in the temple of Theseus, and one forbidding the exportation of statuary.

But the most wonderful and lasting monument which the ancient Greeks builded, was their language. We all have a general idea of its richness, sweetness, and flexibility; but scholars only know its graceful beauty, and wondrous strength. This monument has withstood the assaults of time better even than the Parthenon; for though there remains so much of that magnificent temple that with moderate means it may be restored to its old beauty of form and outline, yet no money can replace its treasures of painting and sculpture, for no living man hath the genius to re-create them. But of the old language no parts have been utterly lost,—they have only fallen into disuse.

Even the popular speech has ever been substantially genuine Greek. The principal changes in the structure of the language have been in the mode of using verbs and nouns. Instead of expressing the tenses by mere changes in the form of the root, auxiliary verbs have been introduced; and instead of expressing cases of nouns by changes in the termination, prepositions have come into use, thus conforming to other modern languages.

It was an easy matter to get rid of the foreign rubbish; but it was a serious one to attempt to restore the ancient structure. There were some enthusiastic enough to propose this, but other councils prevailed, and by general consent, the radical form of the modern Greek was to be retained, while all foreign words were to be rooted out.

It is very curious to note how eagerly the people seconded the scholars. Not only did the writers of newspapers, periodicals, and school-books, carefully eschew all foreign idioms, but the common people threw over the words which their former tyrants had left, as eagerly as though they had been the very bodies of Turks and Italians. As we, when our attention is directed to it, drop such corruptions as *daddy* and *mammy*, and return to *father* and *mother*, so the Greeks rejected such corruptions *Μάνα*, *Πάππας* and returned to *Πατήρ*, *μήτηρ*, and the like. But the Greeks did more than we can be induced to do, for our people cling to *vest*, *pants*, and other vulgarity, leaving our good English *waistcoat* and *trousers*; while they

eagerly substituted pure Greek words for the foreign ones as fast as they were pointed out,

The sailors and soldiers vied with civilians, and though such words as *Capitani*, *Generale*, *Presidente*, had been very common; they immediately substituted the old Greek titles and saluted their leaders as *ναύαρχος*, *στρατηγός*, and *πρόεδρος*.

But not to dwell upon particulars, the result may be stated in a few words. There is now perfect freedom of the press in Greece. There are over thirty newspapers, several periodicals, regularly published, and there are many presses at work throwing off great numbers of works, especially school books. It is stated on good authority, that one single publishing house,—that of Koromelas,—in Athens, published in the last year, over a half million copies of textbooks for the University, the Gymnasia, and the common schools.

These are, for the most part, written in a style so nearly approaching the old language that any good Greek scholar can read them after a very little attention to the difference in form of inflexions.

Nor is it a mere matter of reading. The Greeks are fast developing their natural resources. They are the most active, intelligent, and successful traders in the East. Their superiority in point of physical organization, and their actual advantages in point of education, will soon give them great influence among the motley races which make up the Turkish empire, if not the actual mastery. The popular speech of this rising people is, [as we have said] in the main, genuine Greek. It is surely then most desirable that our youth who are studying the Greek language, should study it in connection with that modification of it so extensively used. It is in order to enable them to do this that Professor Felton has prepared with great care and ability the work at the head of this article; and we commend it heartily to all who are engaged in the study of ancient Greek.

XIV. PHILOLOGICAL CONTRIBUTIONS.

EARLY LATIN ACCENTUATION.

A NEW theory in reference to the early accentuation of Latin has lately been suggested by Dr. A. Dietrich, of Pforte, in Saxony. It is given in Aufrecht and Kuhn's *Zeitschrift für vergleichende Sprachforschung*, Band I. Heft 6. Berlin, 1852. According to the tradition of Latin grammarians, the accent, in words of more than one syllable, is placed either on the penult, or else on the antepenult, and this point is regulated or determined by the quantity of the penult syllable. According to the new theory, the accent in Latin was originally placed on the radical syllable of the word, even if it came before the antepenult; and in words with prefixes, and in compound words, the accent was placed on the preposition, or on the first part of the compound; the usual Latin accentuation having arisen at a later period.

This theory rests, it is curious to observe, on no direct or positive evidence. It is inferred merely from its effects, that is, it is deduced from certain phenomena observable in the language.

1. The abridged forms, *junior*, *ditior*, *poplicus*, *amasti*, are more easily explained, if derived from *ju'venior*, *di'vitiō*, *po'pulus*, *am'a-visti*, with the accent on the radical syllable, than if derived from *juve'nior*, *divi'tior*, *popu'licus*, *amavis'ti*, with the accent on the syllable fallen out; for such accent would naturally tend to preserve the syllable.

2. The derivative forms, *velabrum*, *candelabrum*, *salubris*, *lugubris*, for *velaberum*, *condelaberum*, *saluberis*, *luguberis*, (the suffix being supposed to be derived from Lat. *fero*,) are more easily explained by supposing an accent on the first or radical syllable, than by supposing an accent on any subsequent syllable. The earlier the accent is in the word, the more liable is the vowel in question to fall out.

3. The forms *agnitus*, *dejero*, *nihilum*, shortened from *agnatus*, *dejuero*, *nihilum*, are more easily explained by supposing an accent on the preposition or the first part of the compound, than by an accent on the penult according to the usual laws of Latin prosody.

4. But the most numerous and important class of words, whose

form is explained by the theory before us, is the attenuation of the radical vowel in words compounded with prepositions; as, *ascendo* from *scando*, *compingo* from *pango*, *colligo* from *lego*, *illico* from *loco*, *concido* from *caedo*, *insulto* from *salto*, *include* from *claudio*, *obedio* from *audio*. The cause of this attenuation has not before been so satisfactorily explained, as by this theory.

REMAINS OF ANCIENT GENDER IN ENGLISH.

It was an original trait of the whole Indo-European stock of languages, that many inanimate objects, and even abstract actions, qualities, and attributes, were regarded as having life and personality, and even as endued with sex. This was a sort of personification, and is to be ascribed to the lively imagination of the first language-makers.

This remarkable peculiarity, it is well known, continued to exist in its full vigor, in Anglo-Saxon and Latin, the languages whence the English is mainly derived.

Although this peculiarity has yielded in ordinary English to a more natural and logical view of gender, yet in some words it is still retained in poetry and elevated prose.

This usage, in English, is often called the *rhetorical* or *poetical* gender, and is generally regarded as arising from a direct and new personification at the time; but, in my view, it is more philosophical and more consonant with fact, to consider it as a continuance of the ancient gender, and to deduce it from the original languages above named.

In accordance with this principle, we shall find that *the substantive thus personified, as a general rule, has the gender of the original word whence it is derived.*

1. Many names of inanimate objects which are found used as masculine in English poets and other writers, are masculine in the original languages; as, *April*, (comp. Lat. *mensis*, m.) *comet*, (Lat. *cometes*, m.) *dandelion*, (Fr. *dent de lion*, m.) *elm*, (Anglo-Sax. *ellm*, perhaps m. comp. Fr. *orme*, m.) *flood*, (Anglo-Sax. *flód*, n. but comp. Old Sax. *flood*, m. Fr. *flot*, m.) *hill*, (Anglo-Sax. *hill*, m.) *mountain*, (Lat. *mons*, m.) *northeast*, (comp. Anglo-Sax. *wind*, m. Lat. *ventus*, m.) *sea*, (Anglo-Sax. *sæ*, f. but comp. Old Sax. *seo*, m.) *star*, (Anglo-Sax. *steorra*, m.) *sun*, (Anglo-Sax. *sunne*, f. but comp. Lat. *sol*, m.) *Tartarus*, (Lat. *Tartarus*, m.) *thunder*, (Anglo-Sax. *thuner*, m.) *tower*, (Anglo-Sax. *torr*, m.) *winter*, (Anglo-Sax. *winter*, m.) etc.

2. Many names of inanimate objects which are found used as feminine in English poets and other writers, are feminine in the original languages; as, *Ætna*, (Lat. *Aetna*, f.) *air*, (Lat. *aer*, m. but comp. Gr. *ἀήρ*, f. Anglo-Sax. *lyft*, f.) *bark*, (Fr. *barque*, f.) *church*, (Anglo-Sax.

circ, f.) *city*, (Lat. *civitas*, f.) *comedy*, (Lat. *comædia*, f.) *country*, (Fr. *contrée*, f.) *earth*, (Anglo-Sax. *eard*, m. but comp. Lat. *terra*, f.) *echo*, (Lat. *echo*, f.) *eglantine*, (Fr. *eglantine*, f.) *fig-tree*, (comp. Lat. *figus*, f.) *hell*, (Anglo-Sax. *hell*, f.) *hour*, (Lat. *hora*, f.) *law*, (Fr. *loi*, f.) *mind*, (Anglo-Sax. *gemynd*, m. but comp. Lat. *mens*, f.) *moon*, (Anglo-Sax. *mona*, m. but comp. Lat. *luna*, f.) *muse*, (Lat. *musa*, f.) *music*, (Lat. *musica*, f.) etc.

3. Most abstract nouns which, when personified, are treated as feminine in English, have the termination of feminine nouns in the original languages; as, *oblivion*, *opinion*, *affection*, *ambition*, *compassion*, *derision*, *benevolence*, *experience*, *chance*, *decay*, *avarice*, *justice*, *piety*, *society*, *pity*, *cruelty*, *beauty*, *duty*, *astronomy*, *philosophy*, *concord*, *discord*, *envy*, *fancy*, *nature*, *pleasure*, *virtue*, *form*, *fortune*, *darkness*, *happiness*, *faith*, *truth*, etc.

4. Some abstract nouns which are treated as masculine, are masculine in the original languages; as, *honor*, *terror*, *love*, *fear*, *sleep*, *disease*, etc.

5. Some nouns, however, in English, either from inattention, or from the crossing of opposite principles, have deviated from the preceding rules, and are found treated sometimes as masculine, and sometimes as feminine. Thus, *age*, masc. in Shakspeare and Somerville, fem. in Shakspeare and Sterne; *conscience*, masc. in Darwin, fem. in Fielding and Young; *contemplation*, masc. in Akenside, fem. in Dyer and Mrs. Barbauld; *heaven*, masc. in Shakspeare and Milton, fem. in Milton and Young. So *providence*, *genius*, *vengeance*, *war*, *autumn*, *lily*, etc., are used sometimes as masculine, and sometimes as feminine.

PRETERITIVE VERBS IN ENGLISH.

It is well known that there are preteritive verbs in Latin; as, *coepe*, I begin; *memini*, I remember; *novi*, I know; *odi*, I hate.

It is well known that there are preteritive verbs in Greek; as, *οἶδα*, I know.

But it is not so well known that there are also preteritive verbs in English, because the evidence of their possessing this character is only partially exhibited in the English language.

By *preteritive* verbs I intend verbs in the past tense now used to denote present time.

These verbs are *I can*, *I may*, *I must*, *I ought*, *I shall*, *I will*, *quo*th *I*, *I wot*.

These verbs are known, (1.) by the inflection of the singular, which accords with that of the past tense and differs from that of the present tense in other verbs; as, *I can*, *thou canst*, *he can*, not *I can*, *thou*

canst, he canneth or cans ; (2.) by their being formed from infinitives by a change of vowel (where the nature of the vowel permits it) after the strong conjugation ; as, *I can*, from *to ken* ; *quoth* from *to queathe*, *wot* from *to wit* ; (3.) by their sometimes having the *t* or *d* of the preterite tense ; as, *must, ought* ; and (4.) by their receiving in the plural in other dialects the vowel of the infinitive, which accords in those dialects with the past tense, and not with the present ; as in *can, may, shall, and will*.

1. *I can, thou canst, he can* ; comp. Goth. *kunn*, plur. *kunnum*, from infin. *kunnan*=Eng. *to ken* or *know*.

Knowledge in this case is power ; *to know* how to do a thing is *to be able* to do it.

This verb forms a new preterite after the weak inflection ; as Goth. *kann*, past *kuntha* ; Germ. *kann*, past *konnte* ; but in English this verb by a singular freak forms the past tense *could*, after the analogy of *should* and *would*.

Can is used in English only as an auxiliary of mode, denoting potentiality, and is wanting in the participles, infinitive, and imperative.

The primitive verb *I ken* in English is only obsolescent, not obsolete, and has the weak inflection.

2. *I may, thou mayest, he may* ; comp. Germ. *mag*. plur. *mögen*, from infin. *mögen*, to be able.

This verb which, like its derivatives *might* and *main*, originally denoted power, now in English denotes only possibility.

This verb forms a new preterite after the weak inflection ; as, Goth. *mag*, pret. *mahla* ; Germ. *mag*, pret. *mochte* ; Eng. *may*, past *might*.

May is used in English only as an auxiliary of mode, denoting possibility, and is wanting in the participles, imperative and infinitive.

3. *I must, thou must, he must* ; comp. Germ. *musste*, (used only as a preterite) from *mussen*, to be obliged.

This verb is used in English as a preterite, as well as a present tense.

This verb may be considered as an auxiliary of mode, and is wanting in the participles, imperative and infinitive.

4. *I ought, thou oughtest, he ought* ; comp. Goth. *aih*, plur. *aigum*, from infin. *aigan*, to have=Eng. *to owe* or *own*.

Possession becomes a sort of duty ; *to have* to do a thing is *to owe* to do it.

This verb is used in English as a preterite, as well as a present tense.

This verb may be considered as an auxiliary of mode, and is wanting in the participles, infinitive and imperative.

The primitive verb *I owe*, with the weak inflection, is still in use to denote pecuniary obligation.

5. *I shall, thou shalt, he shall*; comp. Goth. *skal*, plur. *skulum*, from infin. *skulan*, to be obliged.

Necessity in this case involves futurity; *to be obliged to do a thing is to be about to do it*.

This verb forms a new preterite after the weak inflection; as, Goth. *skal*, past *skulda*; Germ. *soll*, past *sollte*; Eng. *shall*, past *should*.

Shall is used in English as an auxiliary of tense, and when emphatic as an auxiliary of mode.

6. *I will, thou wilt, he will*; comp. Germ. *will*, plur. *wollen*, from infin. *wollen*, to will.

Volition here passes into futurity; *to will a thing is to make future its accomplishment*.

This verb forms a new preterite after the weak inflection; as, Goth. *vily*, past *vilda*; Germ. *will*, past *wollte*; Eng. *will*, past *would*.

Will is used in English as an auxiliary of tense and mode, and is wanting in the participles, imperative and infinitive.

The original verb, or a modification of it, inflected after the weak conjugation, is still used in philosophic language to denote the having a volition, and has then the infinitive, and both participles.

7. *Quoth I, quoth he*; comp. Goth. *gath*, plur. *gethum*, from infin. *githan*, Anglo Sax. *cwæth*, plur. *cwædon*, from *cwæthan*, "to say" = *queathe*, in Eng. *bequeathe*.

8. *I wot, thou wottest, he wot*; from infin. *to wit*, is used as a present tense; and *wist*, preterite from *to wis*, is used as its preterite.

J. W. G.

XV. THE PUBLIC LIBRARY OF THE CITY OF BOSTON.

BY G. S. HILLARD.

THE Public Library of the city of Boston sprang from a feeling, on the part of some of its most thoughtful and judicious citizens, that the system of public education, so liberally provided for the young, might be, and should be, extended to those of more mature age. The school training does not go beyond the sixteenth year; and, though boys not destined for the learned professions annually engage in some active business, after that period, yet there is a considerable portion of their time not absorbed by the duties they owe to their employers, which may be happily and wisely occupied in the reading of good books. With still more force does this consideration apply to girls, who form one half of the rising generation, and whose mental training, in view of their future destiny as wives and mothers, is a matter of much importance. A considerable proportion of them belong to families in such comfortable circumstances that they are not compelled to labor for their daily bread; and thus, when withdrawn from the regular duties of the school, they are thrown upon themselves for some hours of every day, in which, if well employed, much useful knowledge may be gained, and the habits of regular occupation, formed at school, may be kept up. Besides these, there are, in so intelligent a community as that of Boston, many men and women, with love of knowledge and taste for reading, who find it difficult to procure good books, and who will gladly embrace the means of intellectual improvement which are furnished by access to a large and well-chosen public library.

These views, formed and gradually extended among the community at large, found expression in the City Council of 1848; and, in conformity with an order passed by them, the mayor, Mr. Josiah Quincy, Jr., obtained from the Legislature an act to authorize the city of Boston to establish and maintain a public library for the use of the inhabitants of the said city. By the same act, the City Council were clothed with the power of making rules and regulations for the care and maintenance of the library; but no appropriations were to exceed the sum of five thousand dollars in any one year. The act was approved by the Governor, March 18th, 1848.

This act of incorporation may be considered the birth of the library. At that time there were no books belonging to it, and no appropri-

ations were then made toward procuring any. The first donation of books, ninety-six in number, came by way of international exchange, through the agency of Mons. Vattemare, of Paris, in the year 1849. The second, in point of time, was that of Mr. Robert C. Winthrop, consisting of one hundred and eighty-seven volumes, sent in the autumn of 1849. Two hundred and nineteen volumes were next received from Mr. J. D. W. Williams, of Roxbury; and smaller contributions from a number of other persons soon followed.

In the summer of 1850, Mr. John P. Bigelow, then mayor of the city, made a donation of one thousand dollars (being a large portion of a sum of money contributed by his fellow-citizens as a mark of personal kindness towards himself) for the use of the library; which was acknowledged in suitable terms by the Board of Aldermen, to the chairman of which body Mr. Bigelow's communication was addressed.

In August, 1850, a communication was addressed by Mr. Edward Everett to the mayor of the city, offering his collection of public documents and State papers, comprising about one thousand volumes, to the city, for the use of the public library, whenever suitable accommodations were made to receive it. In June, 1851, a second communication was addressed by Mr. Everett to the mayor, containing a catalogue of the books he had in the previous year given to the city, and making some observations on the utility of a public library and the objects to be attained by it, from which a portion may here be appropriately introduced:

"The city of Boston expends annually, I believe, a larger sum for schools and school-houses, in proportion to its population, than any city in Europe. Nothing like the same sum is appropriated by the city of London for these purposes. By this noble liberality the means are provided for giving our children of both sexes a good education up to the age of sixteen or seventeen years. This is done at the public expense and for public motives. Individuals, as such, have no more claim upon the public for their education than for their board and clothing. The first principles of popular government require that the means of education should, as far as possible, be equally within the reach of the whole population. This can be effected in no other way than by a system of education supported by the public. The same great motive of public policy requires that the schools should be of a very superior order, so that every child may receive, not merely an education, but an excellent education; as good as could be got at the best and most expensive private schools. I know of no place where these principles are so thoroughly carried out as in Boston; in other words, where so great an equality exists in reference to the inestimable benefit of an early education.

"This, however, is the case only up to the age when school education is at an end. We provide our children with the elements of learning and science, and put it in their power, by independent study and research, to make further acquisitions of useful knowledge from books; but where are they to find the books in which it is contained? Here the noble principle of equality sadly fails. The sons of the wealthy alone have access to well-stored libraries; while those whose means do not allow them to purchase books are too often debarred from them at the moment when they would be most useful. We give them an elementary education, impart to them a taste, and inspire them with an earnest desire for further attainment,—which unite in making books a necessary of intellectual life,—and then make no provision for supplying them.

"I would not overrate the importance of book-learning. It is of little value without original inquiry and original thought. But good books are the record of the original inquiry and thought of able men; which surely do not lose their value by being put upon paper for the benefit of others. Every one regards an opportunity of personal intercourse with men eminent for talent and learning as a great privilege and source of improvement;—to study their works is most effectually to cultivate this intercourse. It is generally impossible, from the nature of the case, to have personal intercourse with any persons of eminence except a very few of our own countrymen and cotemporaries. By books we get access to the great men of every country and every age.

"Is it not, then, a reproach to our city, that—as far as the means of carrying on the great work of instruction beyond the limits of school education are concerned—no public provision exists in favor of those unable to indulge in what is now the expensive luxury of a large library? Where is the young engineer, machinist, architect, chemist, engraver, painter, or student in any of the professions or of any of the exact sciences, or of any branch of natural history, or of moral or intellectual philosophy, to get access to the books which are absolutely necessary to enable him to pursue his inquiries to any advantage? There are no libraries in Boston which strictly speaking are public. The library of the Athenæum and other similar collections are private property. They are administered with all practicable liberality; but are not and cannot be open to the public. Nothing is left to young men who cannot afford to buy books but to borrow them of individuals;—a very precarious and inadequate dependence, and one of which but very few can take advantage.

"For these reasons I cannot but think that a public library, well supplied with books in the various departments of art and science,

and open at all times for consultation and study to the citizens at large, is absolutely needed to make our admirable system of public education complete; and to continue in some good degree through life that happy equality of intellectual privileges, which now exists in our schools, but terminates with them. And I feel confident that with such moderate coöperation as I have indicated, on the part of the city, reliance may be safely placed upon individuals to do the rest. The public library would soon become an object of pride to the citizens of Boston; and every one would feel it an honor to do something for its increase."

In June, 1852, a donation of five hundred dollars, to be expended in such books as Mr. Everett should select, was made by the late Mr. James Brown, whose large and generous sympathies embraced everything that was useful and good; and in September of the same year a donation of one thousand dollars was made, to be expended in the purchase of books, by the late Mr. Samuel Appleton, a man not more remarkable for the energy and industry with which he accumulated a large fortune, than for the benevolence and public spirit with which he expended it.

In the autumn of 1852, a most important event occurred in the history of the library, — the munificent donation of Mr. Joshua Bates, of London. The high position which this gentleman holds in the mercantile world of England, the respect universally accorded to his judgment, experience, and integrity, and the general weight of his character, are well known to his countrymen, and are subjects of just pride to every American visiting London. Born in the neighborhood of Boston, and receiving his first commercial training here, in the counting-room of the late William Gray, he has retained through life a warm attachment to the place, and a lively interest in its progress and fortunes. By his letter of October 1st, 1852, Mr. Bates expresses his readiness to give the noble sum of fifty thousand dollars, the income of which was to be appropriated for the purchase of books for the library, on condition that the city furnish a suitable building for their accommodation, of a size sufficient to furnish room for from one hundred to one hundred and fifty persons to sit at reading-tables. This most generous offer was acknowledged in due terms by the City Council. In the spring of 1853, the amount thus given by Mr. Bates was actually received and invested.

In the spring of 1853, the liberality of Mr. Bates was imitated by Mr. Jonathan Philips, a distinguished citizen of Boston, who gave the sum of ten thousand dollars to the library, the income only to be expended for the purchase of books. A donation of one hundred dollars had previously been received from Mr. James Nightingale.

The library thus far, though so successfully inaugurated, had no local habitation. It had been under the control of a board of trustees, chosen in part from the City Council, and in part from the citizens at large. In the report of the trustees made in July, 1852, they had proposed to the city government to appropriate for the accommodation of the books the ground floor of the Adams school-house in Mason-street. The proposal was favorably received; the premises suggested were granted to the use of the library, and were conveniently fitted up for the purposes required.

The reading-room was opened March 20th, 1854, and on May 2d of the same year the circulating department of the library was opened to public use. The city of Boston, in its official capacity, acted with a prompt and liberal spirit in making provision for the wants of the library. An excellent lot of land was purchased during the year 1853 on Boylston-street, to be the site of a building; a lot on Somerset-street, which had been previously bought, having been resold, as not being sufficiently near the centre of population. A special commission was formed to procure the plans for a suitable building, and to superintend its erection. After some delay, arising mainly from a doubt on the part of some portion of the city government as to the desirableness of this lot on Boylston-street in comparison with a suggested site on the lot of land lying west of the Common, this commission advertised for plans for a suitable building, in the summer of 1855. Twenty-four plans were sent in, many of which were highly creditable to the taste and skill of the designers; and, after a careful examination, that presented by Mr. C. K. Kirby was selected. A beginning of active operations was promptly made, and on the seventeenth of September last, the two hundred and twenty-fifth anniversary of the day on which the city of Boston originally received its present name, the corner-stone of the building was laid by the mayor, Dr. Smith, and an eloquent and appropriate address was delivered by Mr. R. C. Winthrop, president of the commission for the erection of the building. A portion of this address may here be appropriately quoted:—

“Who shall undertake to measure the importance or calculate the value of good reading, as an instrument in advancing the welfare and promoting the happiness of mankind! Even one good book, read by snatches, in the intervals of labor, or in the watches of the night,—what unspeakable comfort and aid has it not often imparted to the humblest, or, it may be, to the loftiest mind and heart!

“I speak not of the Bible, — which is an exception to all books, and which might almost be a substitute for all; — a library in itself, able alone to carry civilization and culture into every home where it is thoroughly and thankfully and thoughtfully read; — itself the corner-stone of all Christian literature forever!

"But, even among books of merely human composition and origin, and dealing with merely human and mortal relations and interests, — how many have there not been, and are there not still, — for a good book never dies, — of a power not only to afford amusement or instruction for an hour or a day, but to mould a whole character and marshal a whole life! How many of the mightiest, as well as of the humbler, intellects of the world's history have borne testimony to the influence of 'the precious life-blood of some master-spirit, embalmed and treasured up on purpose to a life beyond life!'

"Need I recall to you the example of our own Franklin, who tells us himself, in his charming little autobiography, that while indulging his passionate fondness for reading, as a child of twelve years old, he found, among the few books which his father could afford to own, 'a work of De Foe's, entitled an "Essay on Projects," from which, perhaps (says he), I derived impressions that have since influenced some of the principal events of my life?' Or, need I remind you how much of that clear, pure, transparent style, which distinguished him above almost all other American writers, or even English writers, of his own day or of any day, he attributed to the use which he had made of 'an odd volume of the Spectator, which fell into his hands' by the merest accident?

"Such were the instruments by which the great Bostonian pursued that system of self-culture which prepared him for his wonderful career as a Philosopher and a Patriot; — books, odd volumes, sometimes found by chance on the meagre shelves of the family book-case, — sometimes falling into his hands by less natural and accountable accidents, — sometimes borrowed from his fellow-apprentices, and read by stealth while they were sleeping. 'How often,' says he, 'has it happened to me to pass the night in reading by my bedside, when the book had been lent, and was to be returned the next morning, lest it might be missed or wanted!' And you all remember the practical testimony which he gave to his own sense of the value of reading, by setting on foot the very first Social Circulating Library known to the annals of the world.

"But I may not take up more of the time of this occasion in rhapsodies upon reading, or in illustrating or exemplifying the value of good books. I have said more than enough already to justify the remark, that, in establishing this free public library, we are but carrying forward another stage, and that a great stage, towards its ultimate consummation and perfection, that noble system of popular education which our fathers founded. It has originated in no mere design to furnish a resort for professed scholars, where they may pursue their studies, or prosecute their researches, historical or classical, scientific

or literary, — important as such an object might be. It is to be eminently a library for the people, — for the whole people.”

On the day of the laying of the corner-stone of the library, a communication was addressed to Dr. Shurtleff, one of the trustees and a member of the building committee, by Mrs. Shepard, a native of Boston, enclosing a donation of one thousand dollars, to be expended in the immediate purchase of books; and about the same time a letter was received from Mr. Bates, expressing his intention of purchasing and presenting to the city a considerable number of volumes, in addition to his gift of fifty thousand dollars. The City Council expressed their sense of Mr. Bates' renewed liberality by an appropriate resolution, in which they requested Mr. Bates to sit for his bust in marble or bronze, in order that it might be placed in the library building.

The lamented death of the late Mr. Abbott Lawrence took place in the summer of 1855. In his will, dated January 27, 1855, he bequeathed the sum of ten thousand dollars for the use of the library, the income to be expended in the purchase of books.

At this time (April, 1856), there are above twenty-five thousand volumes in the library. The circulation is about three hundred and fifty per day, and there are over ten thousand accounts opened in the books. The rooms appropriated to the library are now four in number; two of which are in the Normal school-house, in Mason-street, and two in the Quincy school-house, in Tyler-street; the last, however, being very small, and used only as store-rooms. The building in Boylston-street is making rapid progress towards completion, and will be finished in the course of the summer of 1857. The plan, it is believed, includes the most recent improvements in the construction of public libraries. It will be completely fire-proof, being almost wholly constructed of stone, brick, and iron. A double outside wall will secure it from dampness, and it will be thoroughly warmed and ventilated. It will contain convenient rooms for readers, for the consultation of books, for the circulating department, and for the main collection; comprising accommodation for about two hundred and fifty thousand volumes. It will be so arranged as to include under one roof a library for consultation, and a library for circulation, so contrived as not to interfere with each other; and the privileges of both will be practically extended to every resident of Boston, qualified by taste and education to profit by their advantages.

The library is under the direction of a board of trustees, seven in number; one of whom is chosen from the aldermen, one from the common council, and five from the citizens at large. It is open every day for the delivery of books for home use from three to eight P. M.; and the reading-room is open from nine A. M. to half past nine P. M.

No. 5; OR VOL. II. No. 1, 14.

XVI. MANAGEMENT OF LIBRARIES.

Edward Edwards, Esq., now principal Librarian of the Manchester Free Library, and formerly connected with the British Museum in London, has in contemplation the publication at an early day of a Library Manual, which promises to be of great value to all collectors of books. Mr. Edwards has been engaged for years in gathering materials; and by correspondence and travel, as well as by studious research, he has amassed a rare amount of information upon that most important department of educational inquiry, the establishment and management of public libraries and museums. The interest felt in our country upon this subject is so great, that we present in detail a plan of Mr. Edwards' work. It will consist of two octavo volumes, entitled

MEMOIRS OF LIBRARIES; together with a Practical Hand-Book of Library Economy. by Edward Edwards.

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“ XII. The Public Libraries of Italy.
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Chap. VII. *Of Special Catalogues* (of Incunabula—of books on vellum—of select collections on particular subjects—of collections of pamphlets, &c.)

“ VIII. *Of writing titles for Catalogues, and preparing them for the press*—*Of the corrections of the press.*

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Book V. *OF THE MANAGEMENT AND SERVICE OF PUBLIC READING ROOMS, AND OF LIBRARIES:*

Chap. I. *Of the provision of books of reference*—*of the regulations of public access.*

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Book VI. *OF THE ADMINISTRATIVE ORGANIZATION OF A PUBLIC LIBRARY.*

Chap. I. *Of the qualifications, duties, and responsibilities of a public librarian.*

“ II. *Of division of labor in the conservation and service of a library.*

“ III. *Of the financial management and account-keeping of a library.*

APPENDIX.

Bibliographical and critical notices of pre-existing works on bibliothecal economy, and on the history of Libraries.

LIBRARIES IN EUROPE.

The 35th annual report of the New York Mercantile Library, recently printed, contains a letter from S. H. Grant, Esq., the excellent librarian of that institution, in regard to a tour in Europe, which he made last year, for the special purpose of examining the celebrated libraries of different capitals. Mr. Grant was admirably fitted to profit by such a journey, and the results of his inquiries can not fail to be of service in the important position which he holds in New York.

We make a few extracts from his letter.

LIVERPOOL FREE LIBRARY.

The Reference portion of the Liverpool Free Library is centrally situated, and contains 18,000 volumes, as also a Reading Room and a fine collection of maps. The two Lending Libraries connected with it, entitled respectively, those of the North and South District, are located in parts of the city quite removed from each other. They number about 4,000 volumes each, and consist of nearly the same works. Persons entitled to draw books must decide which of them they will make use of, and a ticket is given for that one only. The Reference Library is open to all who desire to consult it; but, in order to draw books from the others, a certificate of security is required, signed by two rate-payers. It was very gratifying to note the admirable system that prevails in each department, and the little liability to error that was manifest. As an evidence of this, I would mention that, out of 140,000 volumes circulated to October, 1855, only one had been lost to the library, and that was obtained upon a forged certificate. Many interesting particulars might be added, of the class of persons who make use of those libraries, and the character of works drawn by them. Some of these will be found in their Annual Reports, which, together with their Catalogues and the various blanks used by them, I take the opportunity of laying before you this evening.

Undoubtedly, one great source of attraction with these free libraries, is the Museum of Natural History, of Art, or of Useful Inventions, which is usually attached to them. As an instance of this, I would state that the number of visitors to the Salford Museum, during the year ending November, 1855, was 448,220, while the number of volumes issued to readers, was 115,457.

EFFECTS OF GAS UPON BINDINGS.

In the Portico Library, I noticed some bindings in a very dilapidated condition, evidently not the result of mere wear; and, upon asking if this was the effect of having gas in the building, I was told it was. When in the British Museum, a few days later, the circumstance was mentioned to Mr. Panizzi, who seemed to concur in the cause assigned, and referred to a tour of investigation on this subject which he had made sometime previously, in company with Mr. Faraday, when they became convinced of such being the effects produced by burning gas among collections of books. Since then, however, I have been led to question whether this decay is not even more likely to arise from acids or sulphate of zinc being employed in staining or dressing the leather, than from the products of gas combustion, which, being merely carbonic acid gas and water, are comparatively innocuous.

CIRCULATING LIBRARIES IN LONDON.

Public or Circulating Libraries, of a character like our own, are almost unknown in London. The Russell Institution, and the small collection under the management of the Young Men's Christian Association, though good of their kind, leave the great mass of the community without any other resources for the temporary use of books than such as are afforded by booksellers, of whom more than eighty let out works at rates varying from a penny per volume to a guinea per year. Prominent among these is Mudie's circulating library, located in the vicinity of the British Museum, which has advertised no less than three hundred copies of one work, and *twenty-seven hundred* copies of another, (Macaulay's *England*, vols. 3 and 4)! The proprietor is enabled to do this by getting special discounts on his purchases, and by selling surplus copies as soon as the circulation slackens, which often takes place very soon, and before the work has received any injury. The very fact that a new work, however expensive, can be readily procured here, invites subscribers not from the metropolis alone, but from all parts of England. A Free Library has been recently established in the suburb of Marylebone; but, when one was proposed for London last fall, it was voted against very decidedly by the working-men, who are unwilling to have any additions made to their "rates," even for such an object.

BIBLIOTHEQUE ST. GENEVIEVE, IN PARIS.

This is emphatically a free library, and every reasonable facility seems to be afforded for rendering it available to students and readers. Conveniently arranged, well lighted by day, and having gas fixtures for evening hours, with a sufficient staff of sub-librarians to meet the wants of readers, it is thrown open to every one who can make use of it, and seemed to leave nothing to be desired but ample funds to procure whatever works might there be sought. One of the few restrictions imposed is, that novels shall not be read in the building; for, as it is located in the "Quartier Latin," and is comfortably warmed and lighted, it was found that students would spend their long winter evenings reading such literature.

ROYAL LIBRARY, IN BERLIN.

The Royal Library at Berlin gave me more satisfactory information concerning the manner of conducting large institutions of this kind, than I had elsewhere obtained. And for this I feel indebted especially to the extreme courtesy of its superintendent, the learned historian and bibliographer, Dr. Pertz. The Catalogues, which are both alphabetical and analytical, are arranged with a minuteness which enabled me to ascertain, in a few moments, whether some American Educational Reports that I had with me were already in their collection. The general arrangement of the collection came under review; and as much time as could be given was devoted to looking into divisions, in which this library is especially rich.

PUBLIC LIBRARIES IN EUROPE.

TABLE V.—PUBLIC LIBRARIES IN THE PRINCIPAL STATES, CAPITALS, AND UNIVERSITIES OF EUROPE.

COUNTRIES.	Total No. of Libraries.	No. of Vols. of Printed Books.	No. of Vols. of Manuscript.	PRINCIPAL LIBRARIES OF EUROPE.	Number of Volumes.
Great Britain	34	1,771,493	62,149	Paris, National Library . .	824,000
France	186	4,510,295	119,119	Munich, Royal Library . .	600,000
Prussia	53	2,010,150	15,417	Petersburg, Imperial Lib. . .	446,000
Russia	12	852,090	21,604	London, Brit. Museum Lib.	435,000
Austria	49	2,108,000	41,103	Copenhagen, Royal Library .	412,000
Anhalt	2	25,700	—	Berlin, Royal Library	410,000
Baden	5	401,300	3,170	Vienna, Imperial Library . .	313,000
Bavaria	18	1,268,500	30,156	Dresden, Royal Library . .	300,000
Belgium	14	509,100	20,728	Madrid, National Library . .	200,000
Bremen	2	36,000	—	Wolfenbittel, Ducal Lib. . .	200,000
Brmswick	6	223,000	4,580	Stutgard, Royal Library . .	187,000
Cracow	2	52,000	2,210	Paris, Arsenal Library	180,000
Denmark	5	647,000	3,200	Milan, Brera	175,000
Frankfort-on-the-Maine .	1	62,000	550	Paris, St. Geneviève	150,000
Hamburg	6	200,367	5,000	Darmstadt, Grand Ducal . .	150,000
Hanover	5	492,000	5,743	Florence, Magliabechian . .	150,000
Hesse	5	273,200	400	Naples, Royal	150,000
Hesse-Darmstadt	3	282,600	5,268	Brussels, Royal	133,500
Hildburghausen	1	12,000	—	Rome, Casanate	120,000
Holland	7	228,310	12,000	Hague, Royal	100,000
Lippe-Detmold	1	21,500	100	Paris, Mazarin	100,000
Lubeck	2	52,000	400	Rome, Vatican	100,000
Lucca	1	25,000	—	Parma, Ducal	100,000
Luxemburg	1	19,600	162	UNIVERSITY LIBRARIES.	
Mecklenburg	3	85,400	—	Göttingen, University Lib. . .	360,000
Mecklenburg-Strelitz . .	1	50,000	—	Breslau, University Library .	250,000
Modena	1	90,000	3,000	Oxford, Bodleian Library . .	220,000
Naples and Sicily	8	413,000	3,000	Tübingen, University Lib. . .	200,000
Nassau	1	50,000	—	Munich, University Library .	200,000
Oldenburg	1	60,000	—	Heidelberg, University Lib. .	200,000
Papal States	16	957,000	33,195	Cambridge, Public Library . .	166,724
Parma	3	146,000	—	Bologna, University Library .	150,000
Portugal	7	276,000	7,587	Prague, University Library . .	130,000
Reuss	1	5,000	—	Vienna, University Library . .	115,000
Rudolstadt	1	46,000	—	Leipzig, University Library . .	112,000
Sardinia and Piedmont . .	11	297,000	4,500	Copenhagen, University Lib. .	110,000
Saxe-Coburg-Gotha	5	247,000	5,000	Turin, University Library . . .	110,000
Saxe-Meiningen	1	32,000	—	Louvain, University Library .	105,000
Saxe-Weimer	2	180,000	2,000	Dublin, Trinity College Lib. .	104,239
Saxony	9	570,500	7,950	Upsal, University Library . .	100,000
Spain	27	711,050	8,262	Erlangen, University Lib. . .	100,000
Sweden and Norway . . .	8	353,000	9,300	Edinburgh, University Lib. .	90,854
Switzerland	13	480,300	12,734	Public Libraries in Paris . . .	
Tuscany	10	401,000	30,000	" in London	
Waldeck-Pyrmont	1	30,000	—	" in St. Petersburg	
Wurtemberg	6	433,000	5,200		

The above table is taken from *Burrill's Year Book of the Nations*, and is inserted in this place to attract the attention of legislators and men of wealth to the amazing deficiencies of our cities and colleges in the facilities for the profound investigation of any subject of human learning which a great library affords.

XVII. HINTS. ON READING.

SELECTED BY REV. T. H. VAIL.

"I NO sooner come into the Library, but I bolt the door to me, excluding Lust, Ambition, Avarice, and all such vices, whose nurse is Idleness, the mother of Ignorance and Melancholy. In the very lap of eternity, among so many divine souls, I take my seat with so lofty a spirit, and sweet content, that I pity all that know not this happiness."

[HEINSIUS, of Leyden, in D'Israeli's *Curiosities of Literature*.]

"Read not to contradict and confute, nor to believe and take for granted, nor find talk and discourse, but to weigh and consider."

[BACON'S *Essays—On Studies*. Harpers' ed. p. 179.]

1. DEFINITION OF READING.

Reading, in its true sense and use, is *study*—sometimes a laborious, sometimes an entertaining perusal of books—but always the *study of books*.—"Reading," says Dr. Watts, "is that *means or method of knowledge*, whereby we acquaint ourselves with what other men have published to the world, in their writings."—*Watts on the Improvement of the Mind*, p. 33.

2. OBJECTS OF READING.

"The question recurs, What is the proper object of Reading? what the end to be kept in view, in the choice and perusal of books? One great end, doubtless, is *Knowledge*. . . . One object of reading, then, is to acquire knowledge. But we must bear in mind that knowledge, in itself, is not so much an end as a means, and that we are always to keep in view its ulterior uses and applications. . . . Knowledge brings with it *duties* which are not to be neglected. It is a *talent or trust*; and to enable us to employ it aright, we should understand well the end for which God has given us capacities for acquiring it. On no subject are men more likely to err; and how grievous the error is, and in what ways it manifests itself, let Lord Bacon teach. 'But the greatest error,' says that great writer, 'of all the rest is the mistaking or misplacing of the last or farthest end of knowledge; for men have entered into a desire of learning and knowledge, sometimes upon, &c., . . . seldom sincerely to give a true account of their gift of reason to the benefit and use of men, as if there were sought in knowledge a couch &c., &c., and not a *rich store-house for the glory of the Creator and the relief of man's estate*.' Such, then, is the use of knowledge. It constitutes a rich store-house, whence we should draw materials for glorifying God, and improving man's estate. In other words knowledge is to be employed by us in doing good. . . . This remark leads us to notice another of the benefits to be derived from books, when judiciously selected and properly read. This is the *improvement of our intellectual powers and moral sentiments*. . . . So, again, in regard to taste. . . . What is true of intellect and taste, is not less true of our *moral sentiments*. . . . (Recapitulation.) *Why should we read?* Partly to procure immediate gratification, but principally,—1st, to acquire knowledge, both for its own sake, and for its uses; 2dly, to improve the intellectual powers; 3dly, to refine taste; and 4thly, to strengthen the moral and religious sentiments."—*Professor Alonzo Potter, D. D. Advantages of Science*, Harpers' Ed., pp. 14, 19, 20, 21, 23, 24, 31.

"In all our studies and pursuits of knowledge, let us remember that virtue and vice, sin and holiness, and the conformation of our hearts and lives to the duties of true religion and morality, are things of far more consequence than all the furniture of our understandings, and the richest treasures of mere speculative knowledge."—*Watts on the Mind*, p. 69.

3. GENERAL ADVANTAGES OF READING.

"These arts of reading and writing are of infinite advantage ; for by them we are made partakers of the sentiments, observations, reasonings and improvements of all the learned world, in the most remote nations, and in former ages, almost from the beginning of mankind. . . . The advantages (of reading) are such as these : 1. By reading, we acquaint ourselves, in a very extensive manner, with the affairs, actions, and thoughts of the living and the dead, in the most remote nations, and in most distant ages ; and that with as much ease, as though they lived in our own age and nation. By reading we may learn something from all parts of mankind. . . . 2. By reading, we learn not only the actions and the sentiments of distant nations and ages, but we transfer to ourselves the knowledge and improvements of the most learned men, the wisest and the best of mankind, when or wheresoever they lived. For though many books have been written by weak and injudicious persons, yet the most of those books, which have obtained great reputation in the world, are the products of great and wise men in their several ages and nations. . . . 3. When we read good authors, we learn the *best* sentiments, even of those wise and learned men. For they studied hard, and committed to writing their maturest thoughts, and the result of their long study and experience. . . . 4. It is another advantage of reading that we may review what we read, we may consult the page again and again, and meditate on it, at successive seasons, in our serenest and retired hours, having the book always at hand."—*Watts*, pp. 38, 41, 42.

"Written records constitute the only authentic memorials of the past ; and, since those records have been multiplied by printing, and spread over the world, they are truly imperishable. Nor only so ; they are now the property of the whole race. . . . Now almost all minds experience their enlightening and quickening influence. There is hardly an individual whose knowledge is not enlarged by the use of books ; while, at the same time, multitudes are incited by them to add, by their own labors and discoveries, to the great sum of human attainments. Another advantage of the knowledge gained from books is, that . . . it is much of it arranged and systematized. Thus we are enabled to see the dependence and connection of different truths ; and, what is more important, we learn to study *principles and laws*, instead of losing ourselves amid a multitude of incongruous facts. . . . How important, then, that every one, who would cultivate in his own mind the true spirit of investigation, or who would acquire that power which results from knowledge, how important that he should become familiar with *such books* as illustrate the nature, and embody the fruits of this system of inquiry."—*Potter : Advantages of Science*, pp. 16, 17.

4. IMPORTANCE OF READING, TO THE BUSINESS MAN, THE MECHANIC AND THE MANUFACTURER.

"Let me invite your attention to the consideration of the probable beneficial effect of the diffusion of scientific knowledge, among those practically and habitually employed in the mechanic and manufacturing arts, and it is likely to operate upon the improvement and advancement of the arts and sciences themselves. . . . Perhaps there is no better definition of science, than that it is knowledge acquired by the thoughts and the experience of many, and so

methodically arranged, as to be comprehended by any one. . . . The theory of science, then, is the exposition of known facts, arranged in classes, and expressed in words. . . . The advantages of experience and observation on a large scale, are by no means peculiar to mechanical ingenuity. . . . It is peculiarly true with regard to the chemistry of the arts. . . . In fact, the very foundation of modern chemistry, or, at least, of that branch of it termed pneumatic chemistry, was laid in a brewery. There had been no lack of ingenuity, no sparing of labor or expense, no flagging of zeal or curiosity among the old chemists. But the larger and more striking field of observation and combination afforded to Dr. Priestley, by the vats and gases of his neighbor, the brewer, opened a new world to inquiry. From the thick vapors of the brew-house, like one of the gigantic geni of oriental romance, arose that mighty science which has given to enlightened art a more than magical sway. . . . It is wonderful how the elements of the most precious knowledge are spread around us; how to the curious and instructed observer every thing is full and rich with the means of benefiting the human race. The slightest accession to our knowledge of nature, or our command over it, is sure, ultimately, to connect itself with some other truth, or to unfold its own powers or relations, and thus to lead on to some practical benefit, which the boldest conjecture could never have anticipated. The ignorant and the idle, suffer all such opportunities to pass by them as the vagrant breeze. But such will surely not be the case with industrious men, prepared by general science to turn those occasions to the best account. . . . I argue from experience. . . . Take, for instance, the history of one of the most recent and precious gifts which chemistry has made to medicine. A few years ago, a soap manufacturer of Paris, M. Courtois, remarked that the residuum of his lye, when exhausted of the alkali, produced a corrosion of his copper boilers, which struck him as deserving special inquiry. 'He put it,' says Mr. Herschel, 'into the hands of a scientific chemist for analysis, and the result was, the discovery of one of the most singular and important chemical elements, *iodine*. . . . Curiosity was excited; the origin of the new substance was traced to the sea-plants, from whose ashes the principal ingredient of soap is obtained, and ultimately to the sea-water itself. It was thence hunted through nature, discovered in salt mines and springs, and pursued into all bodies which have a marine origin; among the rest into sponge. A medical practitioner, (Dr. Coindet, a Swiss physician,) then called to mind a reputed remedy for the cure of one of the most grievous and unsightly disorders to which the human species is subject—the *goitre*. . . . and which was said to have been originally cured by the ashes of burned sponge. Led by this indication, he tried the effect of iodine on that complaint, and the result established the extraordinary fact, that this substance, taken as a medicine, acts with the utmost promptitude and energy on goitre, dissipating the largest and most inveterate in a short time, and acting (of course with occasional failures, like all other medicines,) as a specific or natural antagonist against that odious deformity.' Now consider what a map of human misery, for a long series of generations to come, has been relieved or removed by this discovery, arising from the single circumstance of a Parisian soap manufacturer being an observing man, who understood the uses and nature of chemical analysis. . . . Let us cross the channel to Great Britain, for some farther examples. . . . The Telescope, in its earliest stages of invention had received all the improvement that could then be furnished by the genius of the great Galileo, the father of modern science, and by the superhuman philosophical sagacity of Sir Isaac Newton, as well as of their disciples and followers, the most learned and ingenious men of Europe, such as the English Hooke, the Dutch Huygens, and the German Euler.—The product of these labors was admirable proof of the power of human invention; yet it was accompanied with imperfections, especially in the refracting telescope, that seemed insuperable. . . . The removal of this defect was reserved for John Dollond, originally a silk weaver, and afterward an optician and instrument-maker, of London. Half a century after Newton's exper-

iments, Dollond conceived the idea, that the refractive powers of different kinds of glass might be made to correct each other. In this he completely succeeded. Had he not *been familiar with the science* of Newton, Dollond would never have attempted this discovery; had he not also been a *practical mechanic*, it is hardly probable that he would have succeeded. The incidental mention of the ultimate advantages derived by the art of navigation from the labors of Dollond, suggests to my mind another illustration, and recalls the name of *John Smeaton*. He was by regular trade, a philosophical instrument-maker, but his active mind had taken a broad range of rational curiosity and employment, embracing almost every thing in science or art, that could throw light on mechanical contrivance. His inventions of this sort were very numerous and ingenious, but his solid fame rests chiefly upon the erection of the Eddystone lighthouse. There are few narratives of more intense interest or varied instruction than his own account of this great work. The names and lives of our own distinguished benefactors of mankind—Franklin, and Rittenhouse, and Whitney, and Fulton, and Perkins—press upon my memory. The history of Printing offers another tempting field of collateral illustration. I might tell of the Italian Aldus and his sons, of Henry Stephens, of Paris, and his learned family, of the Dutch Elgivirs, the English Bouyer, the Scotch Foulis and Duncan, and surely could not forget the noblest name of them all, our own Franklin. I must also reluctantly refrain from detailing the studies, inventions and improvements of the potter, *Josiah Wedgewood*. But from among the names which thus crowd upon me, let me adduce one more bright example. It was about this season of the year, just seventy years ago, that the instrument-maker employed by the University of Glasgow, received from the professor of natural philosophy in that ancient seminary of learning, a broken model of the steam-engine, as then used, to be put in order for his lectures. An ordinary workman, after admiring the ingenuity of this imperfect machine, would have made the necessary repairs, sent it back to the lecture-room, and the world would have gone on as usual. But it had fallen into the hands of *James Watt*, a young mechanic, of singular and various inventive sagacity, and of most patient and persevering ingenuity, who, *in addition to much miscellaneous information, and some mathematical acquirement, had been led by a liberal curiosity to master all that was then known of chemistry, and theoretical natural philosophy in its broadest sense*. Look around for yourselves—on our rivers and lakes—on the manufactures of Europe and America, piled up in our shops—on the railroads which traverse, or are just about to traverse, our continent—on the wealth, the power, the rapid interchange of commerce and intelligence produced by the modern steam-engine, and then let me remind you, that all this is the fruit of the solitary labors and studies of a Glasgow work-shop; directed by an active, vigorous, daring, but most patient and persevering mind, which knew how to use well the knowledge that other wise or ingenious men had previously reasoned out or discovered. I have not yet touched upon the influence of knowledge, upon the operative and producing classes themselves, in improving the character, raising the thoughts, awakening sleeping talent, and thus qualifying this great and valuable body, for the able, just, right, wise and honorable discharge of all the duties of men, of citizens, of freemen, of patriots. This is alone, and in itself, a theme full of interest—full of excitement. . . . Such were Saratoga's victors, such the brave men whose blood earned our liberties. Foremost among them was the blacksmith of Rhode Island, *Nathaniel Greene*; he whom Hamilton, while he honored Washington as 'the first man of the country,' did not hesitate to style 'the first soldier of the Revolution. There also was the book-binder, *Knox*, and from among the mechanics of New York, came forth our *Willett*, 'the bravest of the brave.' Abroad, our interests were watched over, and our national dignity represented, by the printer, *Franklin*. Foremost in our councils at home, and enrolled among the immortal names of the committee of five, who prepared and reported the Declaration of Independence, was

the shoemaker, *Roger Sherman*, a man self-educated and self-raised. Here were other names like these which I cannot now pause to recapitulate. Still I cannot forbear from paying a passing tribute to the memory of a townsman and a friend. The courage, seamanship, and ability of *Commodore Chauncey*, would have been exerted in vain, had they not been seconded by the skill, the enterprise, the science, the power of combination, and the ready and inexhaustible resources of his ship-builder, *Henry Eckford*. The ardor for improvement, the thirst for knowledge, manifested by the mechanics of this and others of our cities, are gratifying indeed. But they derive a tenfold interest and value from the greater results which they foretell, and the more glorious future they appear to usher in." *Gilian C. Verplanck's Discourse before the Mechanics' Institute of New York, Nov. 27, 1833*—passim.

5. CHOICE OF BOOKS.

"The world is full of books ; but there are multitudes which are so ill-written, that they were never worthy any man's reading ; and there are thousands more which may be good in their kind, but are worth nothing, when the month, or year, or occasion is past, for which they were written. Others may be valuable in themselves for some special purpose, or in some peculiar science, but are not fit to be perused by any but those who are engaged in that particular science or business. It is of vast advantage or improvement of knowledge and saving time, for a young man to have the most proper books for his reading recommended by a judicious friend. There is yet another sort of books, (in addition to books of science and complete treatises on subjects, which are first recommended,) of which it is proper I should say something while I am treating on this subject ; and these are *history, poesy, travels, books of diversion or amusement* ; among which we may reckon also, little common pamphlets, newspapers, or such like. For many of these, I confess, *once reading may be sufficient*, where there is a tolerably good memory. Still let it be remembered, that where the historical narrative is of considerable moment, where the poesy, oratory, &c., shine with some degrees of perfection and glory, a single reading is neither sufficient to satisfy a mind, that has a true taste for this sort of writing ; nor can we make the fullest and best improvement of them, without proper reviews, and that in our retirement as well as in company. Among these writings of the latter kind, we may justly reckon *short miscellaneous essays* on all manner of subjects ; such as the *Occasional Papers*, the *Tattlers*, the *Spectators*, and some other books, that have been compiled out of the weekly or daily products of the press. Among other books, which are proper and requisite, in order to improve our knowledge in general, or our acquaintance with any particular science, it is necessary that we should be furnished with *vocabularies and dictionaries of several sorts*, namely, of *common words, idioms, and phrases*, in order to explain their sense ; of *technical words, or the terms of art*, to show their use in arts and sciences ; of *names of men, countries, towns, rivers, &c.*, which are called *historical and geographical dictionaries, &c.* *These are to be consulted and used upon every occasion.* If such books are not at hand, you must supply the want of them, as well as you can, by consulting such as can inform you." *Watts on the Mind*, pp. 59, 69, 71, 72.

"A wise and good man was accustomed, in his devotion, to thank God for books. He did well ; *good books, rightly used*, are among our greatest blessings. Books introduce us to the noblest minds of our race, and permit us to commune intimately with them, even at those privileged hours, when they obtain their brightest visions of truth, and pour forth their loftiest or most touching eloquence. It must be remembered, however, that *all books are not good books*, and that *even good books may be so read, as to fail of their appropriate ends*. Milton has said, that 'a wise man can sooner gather gold out of

the drossiest volume, than a fool, wisdom out of Scripture.' It is certain that the effect of reading depends nearly as much on the disposition and taste of the reader, as on the character of the writer. Hence the great importance of considering not only *what* we read, but also in *what way*, and for *what ends*. A love of books can be acquired only by those who find pleasure in using them; and hence, whoever would cultivate in himself or others this most desirable taste, *should select, especially at first*, such works as can be read with sustained and quickened attention. But let it not be forgotten, that *such* books, if read *only to amuse* and entertain, must, if *good*, *fail* of much of their effect, while, if *bad*, *their influence will be deplorable*. By degrading them into instruments of momentary pleasure, we shall lose sight of their true worth, and learn to confound them with that herd of books, usually known as 'light reading'; books which seem to have been written in order to be *once read*, and then *forever forgotten*. Soon, too, we shall disrelish all books than contain any serious matter, and be content only with those of the most frivolous and exciting kind. These last will claim every hour that can be allotted to *reading*; and happy shall we be, if they do not *steal hours that ought to have been given to study*. To this danger we are peculiarly exposed in our own day. We should choose books that will exercise the faculty of close and continuous *attention*, and as we advance, we should subject it to the necessity of more strenuous and protracted effort. They should be books, too, which require us to *think*; which sometimes incline us to close our volume, that we may review the arguments and statements of the writer, and *test* them by the rules of sound reasoning; books, which call us to analyze *what* is complicated, to arrest what is fugitive, and trace out what is subtle; which suggest new subjects for reflection and inquiry, and gradually lead us to *appreciate* and enjoy the pleasure that results from the mere exercise of our intellectual powers. So, again, in regard to *taste*. All men have been endowed, though in different degrees, with a relish for what is beautiful or perfect of its kind. Hence, books, as well as companions, should be *selected with reference to the cultivation*, not only of the understanding, but also of the taste. And in this respect we are exposed to much danger. Not a few of the works of our day (especially those of a fictitious and periodical character—works, too, which command enthusiastic applause,) are directly calculated to encourage a false taste in literature, as well as a vicious tone in manners and morals. What is true of intellect and taste is not less true of our *moral sentiments*. And, as our moral judgments, moreover, are insensibly but powerfully affected by companions, so are they by books—companions, against whom we are apt to be least on our guard, whose instructions we are disposed to receive with a too implicit faith, and whose society we enjoy at those seasons of relaxation, when the heart is most open to influence. It is nearly an axiom, that people will not be better than the books they read. . . . It is important that all books be proscribed, which inculcate indifference to moral distinctions; which tend, however indirectly, or insidiously, to excite our evil passions; which exhibit the guilty and profligate as objects of sympathy and admiration; or which serve to lessen, in the least, our reverence for principle, or our hatred of a mean and time-serving policy. . . . In thus explaining the objects which ought to be kept in view in reading, I have, in effect, furnished rules for judging of books, of their character and value. If *one great end of reading* be to enlarge our knowledge, then we should, for the most part, read no books which do not *furnish useful information*. I say, for the most part, because we *sometimes* read rather to improve taste, quicken and cultivate imagination, or discipline reason, rather than to gain knowledge. Hence *another rule*, by which we may try a book, is *the effect it has upon the understanding*. Does it require thought, and excite to reflection? Does it deal in *sound reasoning* only, avoiding all specious fallacies, and making no appeals to mere prejudice or passion? Does it cultivate in our minds a disinterested *love of truth*? If, on the other hand, it be a *work of imagination or taste*, it should be tried by *its influence on the sensitive part of our nature*. If it pre-

sent us with images of beauty and simplicity, enable us to view the works of nature and art, with a keener and more discriminating relish, inspire us with a love for the perfect, and, above all, if it strengthen and animate our noble sentiments of virtue, it merits frequent and careful perusal. But, *if otherwise, &c.*, I need not add, that it is a book to be reprobated and avoided.

WHAT SHOULD WE READ? Only good books; which Milton describes as 'the precious life-blood of master-spirits, embalmed and treasured up on purpose to a life beyond life.' To know whether a book be good, consider, 1st, whether it adds to our sum of knowledge; 2ndly, whether it induces thought, and exercises reason; 3dly, whether it improves taste; and 4thly, whether it strengthens conscience.'—*Dr. Potter: Advantages of Science*, pp. 9—12, 22—27, 31.

"Read *always the best and most recent book on the subject which you wish to investigate*. 'You are to remember,' says Pliny the younger, 'that the most approved authors of each sort are to be carefully chosen, for, as it has been well observed, though we should read much, we should not read many authors.'"—*Dr. Potter: Handbook for Readers*, p. 18.

6. SYSTEMATIC READING; OR READING IN COURSES, OR BY SUBJECTS.

"Some prejudice, against what are called courses of study, has been justly provoked by the great number and variety of those which have been proposed from time to time. At the outset, *almost any course of reading is better* than the desultory and irregular habits which prevail so extensively. When once the student has acquired a taste for good books, and some just ideas of the object and uses of reading, he may be safely left to glean for himself, from the counsels of others, such hints and directions as are best adapted to his own case. Do not become so far enslaved by any system or course of study, as to think it may not be altered, when alteration would contribute to the healthy and improving action of the mind. Beware, on the other hand, of frequent changes in your plan of study. This is the besetting sin of young persons. 'No, take your course wisely, but firmly,' says Wirt, 'and having taken it, hold upon it with heroic resolution, and the Alps and Pyrenees will sink before you. The whole empire of learning will be at your feet, while those who set out with you, but stopped to change their plans, are yet employed in the very profitable business of changing their plans. Let your motto be, *Perseverando vincas*, (by perseverance thou shalt conquer.) Practice upon it, and you will be convinced of its value, by the distinguished eminence to which it will conduct you.' Study subjects, rather than books; therefore, compare different authors on the same subjects; the statements of authors, with information collected from other sources; and the conclusions drawn by a writer with the rules of sound logic. 'Learning,' says Feltham, 'falls far short of wisdom; nay, so far that you scarcely find a greater fool than is sometimes a mere scholar.' 'I take care,' says one of the profoundest and most versatile scholars in England, as quoted by Mr. Warren, in his *Law Studies*, 'always to ascertain the value of what I look at, and if satisfied on that score, I most carefully stow it away. I pay, besides, frequent visits to my 'magazine,' and keep an inventory of at least every thing important, which I frequently compare with my stores. It is, however, the systematic disposition and arrangement I adopt, which lightens the labors of memory. I was by no means remarkable for memory, when young; on the contrary, I was considered rather defective on that score.' *Dare to be ignorant of many things.* 'In a celebrated satire, (*the Pursuits of Literature*) much read in my youth,' says Dr. Quincy, 'and which I myself read about twenty-five years ago, I remember one counsel there addressed to young men, but, in fact, of universal application. I call upon them, said the author, to dare to be ignorant of many things; a wise counsel and justly expressed. A good scheme of study will soon show itself to be such by this one test, that it will exclude as powerfully as it will appropriate; it will be a system of repulsion no less than of attrac-

tion; once thoroughly possessed and occupied by the deep and genial pleasures of one truly intellectual pursuit, you will be easy and indifferent to all others that had previously teased you with transient excitement."—*Dr. Potter: Handbook for Readers*, pp. 15—18, 20, 21.

"In learning any new thing, there should be as little as possible first proposed to the mind at once. That being understood, and *fully mastered*, proceed to the *next* adjoining part, yet unknown. This is a slow, but safe and sure way to arrive at knowledge. The mind will be able, in this manner, to cope with great difficulties, and prevail over them, with amazing and happy success. . . . Engage not the mind in the intense pursuit of too many things at once; especially, such as have no relation to one another. This will be ready to distract the understanding, and hinder it from attaining *perfection in any one subject of study*. . . . In the pursuit of every valuable subject of knowledge, keep the end always in your eye, and be not diverted from it by every petty trifle you meet with in the way. . . . Be not satisfied with a mere knowledge of the best *authors*, that treat of any subject, instead of *acquainting yourselves thoroughly with the subject itself*."—*Dr. Watts on the Mind*, pp. 131—133, 72.

7. READING CONJOINED WITH THINKING.

"Deal freely with every author you read; and yield up your assent only to evidence and just reasoning on the subject. . . . In the compositions of men, remember, you are a man as well as they; and it is not their reason, but your own, that is given to guide you, when you arrive at years of discretion. . . . Enter into the sense and argument of the authors you read; examine all their proofs, and then judge of the truth or falsehood of their opinion. . . . You will acquire by degrees a habit of judging justly, and of reasoning well, in imitation of the good writer, whose works you peruse. . . . Never apply yourself to read any human author, with a determination beforehand either for or against him; nor with a settled resolution to believe or disbelieve, to confirm or to oppose whatever he says; but always read with design to lay your mind open to truth, and to embrace it, as well as to reject every falsehood, though it appears under ever so fair a disguise. . . . Never let an *unknown word* pass in your reading, without seeking for its meaning. . . . And, indeed, how many volumes soever of learning a man possesses, he is still deplorably poor in his understanding, till he has made these several parts of learning his own property, by reasoning, by judging for himself, and remembering what he has read."—*Dr. Watts on the Mind*, pp. 61, 62, 66, 67, 72, 73.

"Says Locke, 'Reading furnishes the mind only with *materials* of knowledge; it is *thinking* that makes what we read *ours*.' . . . Says Dugald Stewart, 'nothing, in truth, has such a tendency to *weaken*, not only the powers of invention, but the intellectual powers in general, as a habit of *extensive and various reading without reflection*.' . . . Accustom yourself to refer whatever you read to the general head to which it belongs, and trace it, *if a fact*, to the *principle* it involves or illustrates; *if a principle*, to the *facts* which it produces or explains."—*Dr. Potter: Handbook for Readers*, pp. 16, 17, 19.

"*Reading, to be useful, should be combined with reflection*. Books can afford but little improvement to those who do not *think as well as read*. . . . Thus we see the great necessity of reading with deliberation; and may I not add, that in this respect, *laboring people*, and those whose pursuits give to them almost constant engagement, have *advantages* which they are not apt to *appreciate*. By reading at intervals, some portion of a good book, and then carrying the matter with them to their places of business, as a subject for thought and conversation, they will soon discover that the subject grows upon them in interest that their views insensibly become clearer and more enlarged, and that useful reflections, not suggested by the author, rise before their minds. And thus it is, that men of *active pursuits* are more apt, as all *expe*

rience testifies, to accumulate useful knowledge, than those whose lives are passed in leisure and in the midst of books. . . . Let me advise, then, that books be read deliberately. The old maxim, that 'if a thing be worth doing at all, it is worth doing well,' is peculiarly applicable to reading. A book run over hastily, is rarely understood; if not understood, it is not remembered; and if not remembered, the time spent in reading it is lost. . . . By deep and diligent meditation, we (should) acquire something which may truly be called our own; for, as Milton says:—who reads

‘Incessantly, and to his reading brings not
A spirit and judgment equal or superior,
Uncertain and unsettled still remains,
Deep versed in books, but shallow in himself.’”

Dr. Potter: Advantages of Science, pp. 17, 18, 27, 30.

8. SOCIAL OR CLASS READING.

‘If three or four persons agree to read the same book, and each brings his own remarks upon it, at some set hours appointed for conversation, and they communicate, mutually, their sentiments on the subjects and debate about it in a friendly manner, the practice will render the reading of any author more abundantly beneficial to every one of them. . . . If several persons engaged in the same study, take into their hands distinct treatises on one subject, and appoint a season of communication once a week, they may inform each other in a brief manner, concerning the sense, sentiments and method of those several authors, and thereby promote each other’s improvement, &c. . . . Talking over the things which you have read to your companions, on the first proper opportunity, is a most useful manner of review or repetition, in order to fix them upon the mind. Teach them to your younger friends, in order to establish your own knowledge, while you communicate it to them.”—*Dr. Watts on the Mind, pp. 60, 61, 178.*

“‘Company and conversation,’ says Feltham, ‘are the best instructors for a noble nature.’ ‘An engagement and combating of wits,’ says Erasmus, ‘does, in an extraordinary manner, both show the strength of geniuses, rouses them and augments them. If you are in doubt of any thing, do not be ashamed to ask, or, if you have committed an error, be corrected.’”—*Dr. Potter: Handbook for Readers, p. 19.*

“Some books should be read in company with others, especially with our family. We never relish a good book so highly as when we read it with a friend of congenial tastes. . . . And in this plan of social reading, what friends so proper as those of our household! What employment more appropriate for the domestic circle, than one which causes the minds of all to move in unison, thus strengthening the ties of mutual affection, and causing us to associate with home, the remembrance of our intellectual pleasures! . . . It will not be easy to preserve the good old practice of collecting our families around the cheerful fire, and teaching them to relish early the home-bred delights of affection, and of a common intercourse with those best and most improving visitors, good books.” *Dr. Potter: Advantages of Science, pp. 27, 29.*

9. RE-READING OR REVIEWING.

“A frequent review and careful repetition of the things we would learn, and an abridgment of them in a narrow compass, has a great influence to fix them in the memory. . . . Repetition is so very useful a practice, that Winemon, even from his youth to his old age, never read a book without making some small points, dashes, or hooks in the margin, to mark what parts of the discourse were proper for review; and when he came to the end of a section or chapter, he always shut his book, and recollected all the sentiments or expres-

sions he had marked, so that he could give a tolerable analysis and abstract of every treatise he had read, just after he had finished it. Hence he became so well furnished with a rich variety of knowledge."—*Dr. Watts on the Mind*, p. 177.

"Strive, by frequent reviews, to keep your knowledge *always at command*. 'What booteth,' says an old writer, 'to read much, which is a weariness to the flesh; to meditate often, which is a burden to the mind; to learn daily, with increase of knowledge, when he is *to seek* for what he *hath* learned, and perhaps *then*, especially, when he hath most need thereof? Without this, (reviewing) our studies are but lost labor.'"—*Dr. Potter: Handbook for Readers*, p. 20.

"I would recommend, that when we become acquainted with a truly good book, we *read it often*. Cecil tells us that he had a '*shelf for tried books*;' books, which he could never open without being incited to reflection, and enriched by some new hint or principle. It should be so with all of us. *A few books properly selected and faithfully read, would suffice to yield us more, both of pleasure and profit, than any number, however great, taken at random, and read, as they usually are, in a hurried and unreflecting manner.* A book, moreover, which deserves the praise of being good, has cost its author efforts which cannot be appreciated at a single reading."—*Dr. Potter: Advantages of Science*, p. 29.

10. READING CONNECTED WITH WRITING.

"For want of retiring and writing, many a learned man has lost several useful meditations of his own, and could never recall them. . . . If a book has no index nor good table of contents, it is very useful to make one as you are reading it. . . . It is sufficient in your index, to take notice only of those parts of the book which are new to you, or which you think well written, and well worthy of your remembrance or review. Shall I be so free as to assure my younger friends, from my own experience, that these methods of reading will cost some pains in the first years of your study, and especially in the first authors, which you peruse in any science, or on any particular subject; but the profit will richly compensate the pains. And in the following years of life, after you have read a few valuable books on any special subject in this manner, it will be very easy to read others of the same kind; because you will not usually find very much new matter in them, which you have not already examined. If the writer be remarkable for any peculiar excellencies or defects in his style or manner of writing, make just observations upon this also; and whatever ornaments you find there, or whatever blemishes occur in the language or manner of the writer, you may make just remarks upon them. And remember, that one book, read over in this manner, with all this laborious meditation, will tend more to enrich your understanding, than skimming over the surface of twenty. . . . It is useful to *note down matters of doubt and inquiry*, and take the first opportunity to get them resolved either by persons or books. . . . Lawyers and Divines write down short notes or hints of the principal heads of what they desire to commit to memory, in order to preach or plead. . . . The art of *short hand* is of excellent use for this, as well as other purposes. . . . Those who scarcely ever take a pen in their hands to write short notes or hints of what they are to learn, need a double degree of power to *retain* or *recollect* what they read or hear."—*Dr. Watts on the Mind*, pp. 42, 64, 65, 72, 178.

"Nor is it merely to the philosopher, who wishes to distinguish himself by his discoveries, that *writing affords an useful instrument of study*. Important assistance may be derived from it by all those who wish to impress on their minds the investigations which occur to them *in the course of their reading*."—*Dugald Stuart: Philos. of the Mind*, Vol. 1, p. 372.

"Seek opportunities to *write and converse* on subjects about which you

read. '*Reading*,' says Bacon, 'maketh a full man, conference, a ready man, and writing, an exact man.'"—*Dr. Potter: Hand Book, &c.*, p. 19.

"I add one more suggestion in the words of another. Young persons especially will pardon the suggestion, that in no way, perhaps, can their store of applicable knowledge be more certainly, though at first almost imperceptibly, increased, than by *habitually reading with a pen in the hand*. There is much good sense in these doggerel verses, for which we are indebted to no ordinary thinker."

"In reading authors, when you find
Bright passages that strike your mind,
And which, perhaps, you may have reason
To think on at another season,
Be not contented with the sight,
But take them down in black and white;
Such a respect is wisely shown,
As makes another's sense one's own."

Dr. Potter: Advantages of Science, p. 30.

11. METHOD OF READING—GENERAL HINTS AND DIRECTIONS.

"Books of importance of any kind, and especially complete treatises on any subject, should be first read in a more general and cursory manner, to learn a little what the treatise promises, and what you may expect from the writer's manner and skill. And for this end, I would advise always, that the preface be read, and a survey taken of the table of contents, if there be one, before this first survey of the book. By this means, you will not only be better fitted to give the book the first reading, but you will be much assisted in your second perusal, which should be done with greater attention and deliberation; and you will learn with more ease and readiness what the author pretends to teach. In your reading, mark what is new or unknown to you before; and review those chapters, pages, or paragraphs. . . . Other things, also, of the like nature may be usefully practiced with regard to the authors which you read. If the method of a book be irregular, reduce it into form by a little analysis of your own, or by hints in the margin; if those things are heaped together which should be separated, you may wisely distinguish and divide them. If several things relating to the same subject are scattered up and down separately through the treatise, you may bring them all to one view, by references; or if the matter of a book be really valuable and deserving, you may throw it into a better method, reduce it to a more logical scheme, or abridge it into a lesser form. All these practices will have a tendency both to advance your skill in logic and method, to improve your judgment in general, and to give you a fuller survey of that subject in particular. When you have finished the treatise, with all your observations upon it, recollect and determine what real improvements you have made by reading that author. . . Endeavor to apply every speculative study, as far as possible, to some practical use, that both yourself and others may be the better for it."—*Dr. Watts*, pp. 59, 64, 139.

"Always have some useful and pleasant book ready to take up in 'odd ends' of time. A good part of life will otherwise be wasted. 'There is,' says Wyttenbach, 'no business, no avocation whatever, which will not permit a man who has an inclination to give a little time every day to the studies of his youth. . . . Be not alarmed because so many books are recommended. They are not all to be read at once, nor in a short time. 'Some travelers,' says Bishop Hall, 'have more shrunk at the map than at the way; between town, how many stand still with their arms folded.' . . . Do not attempt to read much or fast. 'To call him well read, who reads many authors,' says Shaftesbury, 'is improper.' 'It does not matter,' says Seneca, 'how many, but how good books you have.' . . . Endeavor to find opportunities to use your knowledge, and apply it in practice. 'They proceed right well in all know-

ledge,' says Bacon, 'which do *couple* study with their practice, and do not first study altogether, and then practice altogether.'—*Dr. Potter: Hand Book, &c.*, pp. 16, 20.

"HOW SHOULD WE READ? First, thoughtfully and critically; secondly, in company with a friend or with our family; thirdly, repeatedly; fourthly, with pen in hand."—*Dr. Potter: Advantages of Science*, p. 31.

12. EFFECTS OF BOOKS—INFLUENCE OF AUTHORS.

"Wherefore should not the literary character be associated in utility or glory with the other professional classes of society? The commercial prosperity of a nation inspires no renovation in mankind; nor will its military power with their affection. There is an interchange of opinions, as well as of spices and specie, which induces nations to esteem each other; and there is a glorious succession of authors, as well as of seamen and soldiers, forever standing before the eyes of the universe. It is by our authors that foreigners have been taught to subdue their own prejudices. . . . The small cities of Athens and of Florence will perpetually attest the influence of the literary character over other nations; the one received the tributes of the mistress of the universe, when the Romans sent their youth to be educated at Athens; while the other, at the revival of letters, beheld every polished European crowding to its little court. . . . Those who govern a nation, cannot at the same time enlighten them;—authors stand between the governors and the governed. . . . The single thought of a man of genius has sometimes changed the dispositions of a people, and even of an age. . . . When Locke and Montesquieu appeared, the old systems of government were reviewed; the principles of legislation were developed; and many changes have succeeded, and are still to succeed. . . . Observe the influence of authors in forming the character of men, where the solitary man of genius stamps his own on a people. The habits, the precepts, &c., of Dr. Franklin imprinted themselves on his Americans; while the elegant tastes of Sir William Jones could inspire the servants of a commercial corporation to open new and vast sources of knowledge. . . . While Britain retains her awful situation among the nations of Europe, the 'Sylva' of Evelyn will endure with her triumphant oaks. In the third edition of that work, the heart of the patriot exults at its results. He tells Charles I. 'how many millions of timber trees, besides requisite others, have been propagated and planted at the *instigation, and by the sole direction of this work*. It was an author in his studious retreat, who, casting a prophetic eye on the age we live in, secured the late victories of our naval sovereignty. Inquire at the Admiralty how the fleets of Nelson have been constructed, and they can tell you that it was with the oaks which the genius of Evelyn planted. . . . The same character existed in France, where De Lérès, in 1599, composed a work on the cultivation of mulberry trees, in reference to the art of raising silk-worms. He taught his fellow-citizens to convert a leaf into silk, and silk to become the representative of gold. . . . A work in France, under the title of 'L'Ami des Hommes,' first spread there a general passion for agricultural pursuits; and although the national ardor carried all to excess, yet marshes were drained, and waste lands inclosed. . . . The commercial world owes to two retired philosophers, in the solitude of their study, Locke and Smith, those principles which dignify trade into a liberal pursuit, and connect it with the happiness of a people. . . . In the history of genius, there is no chronology, for to us everything it has done is present; and the earliest attempt is connected with the most recent. . . . My learned and reflecting friend, (Sharon Turner, Esq.,) whose original researches have enriched our national history, has thus observed on the character of Wickliffe:—'To complete our idea of the importance of Wickliffe, it is only necessary to add, that as his writings made John Huss the Reformer of Bohemia, so the

writings of John Huss led Martin Luther to be the Reformer of Germany; so extensive and so incalculable are the consequences which sometimes follow from human actions.' Our historian has accompanied this, by giving the very feelings of Luther in early life on his first perusal of the works of John Huss; we see the spark of creation caught at the moment; a striking influence of the generation of character! Thus a father-spirit has many sons. . . . Such are the 'great lights of the world,' by whom the torch of knowledge has been successively seized, and transmitted from one to the other. . . . The torch of genius is perpetually transferred from hand to hand amidst this fleeting scene." *D'Israeli's Literary Character, &c. ; Alexandrian edition, pp. 444, 446.*

13. EARLY READING—FIRST STUDIES.

The serious caution and conscientious watchfulness to be exercised by parents and friends, in the selection of books for the young, and for those who have not been accustomed to reading, (on the minds of both which classes, vivid and permanent, and therefore most important impressions will necessarily be produced by the authors recommended,) are forcibly suggested by the illustrations which follow. The practical teachings of these examples make it proper that they should have the place of emphasis and chief effect, at the close of our collations.

"The first studies form an epoch in the history of genius, and unquestionably have sensibly influenced its productions. Often have the first impressions stamped a character on the mind adapted to receive one, as often the first step into life has determined its walk. . . . An early attachment to the works of Sir Thomas Browne produced in Johnson an excessive admiration of that Latinized English, which violated the native graces of the language. The first studies of Rembrandt affected his after labors; that peculiarity of shadow which marks all his pictures, originated in the circumstance of his father's mill receiving light from an aperture at the top, which habituated that artist afterwards to view all objects as if seen in that magical light. When Pope was a child, he found in his mother's closet a small library of mystical devotion; but it was not suspected till the fact was discovered, that the effusions of love and religion poured forth in his *Eloisa*, were derived from the seraphic raptures of those erotic mystics, who to the last retained a place in his library among the classical bards of antiquity. The accidental perusal of Quintus Curtius first made Boyle 'in love with other than pedantic books, and conjured up in him,' as he expresses it, 'an unsatisfied appetite of knowledge; so that he thought he owed more to Quintus Curtius than did Alexander.' From the perusal of Rycant's folio of Turkish history in childhood, the noble and impassioned bard of our times, (Lord Byron,) retained those indelible impressions which gave life and motion to the '*Giaour*, the *Corsair* and *Alp*.' A voyage to the country produced the scenery. . . . The influence of first studies, in the formation of the character of genius, is a moral phenomenon, which has not sufficiently attracted our notice. Dr. Franklin acquaints us that when young and wanting books, he accidentally found De Foe's '*Essay on Projects*,' from which work impressions were derived which afterwards influenced some of the principal events of his life. . . . Such is the influence through life of those first unobserved impressions on the character of genius, which every author has not recorded." Such, too, in a greater or less degree, is the influence of first impressions on all minds. As the impressions can never be obliterated, the influence is to last forever.—*See D'Israeli's Literary Character, &c. ; Alexandrian edition, p. 412.*

14. HINTS TO YOUNG LADIES AS TO WHAT TO READ AND HOW TO READ.

"THINK, my dear young friends, of the difference that is made in the character of a human being, simply by reading. Compare an Irish girl

who comes to this country at fifteen or sixteen, who has never been taught to read, with one of your own countrywomen in the humblest condition, of the same age, who *loves to read*, and who has read the books within her reach! Books are the best property of the rich; think what they are to the poor who *really love them*. Compare the pampered boy, who cares for nothing so much as the indulgence of his sensual appetites, fretting over a table spread luxuriously, to a little fellow who, coming from the district-school, with his empty luncheon basket, snatches his Robinson Crusoe from the shelf; and, while his half-frozen toes are warming, devours it, forgetful of every evil in life. . . . It was but yesterday that I was at the humble home of a revolutionary soldier—a pensioner. I found his wife reading. Her eight children are dispersed south and west, and the old pair are left alone. They live far away from the village, and hardly put their heads out of doors from November till March. I involuntarily expressed my sympathy in their solitary condition. ‘Oh,’ replied the old lady most cheerily, ‘I have company—*books*, the best of company!’ Think over your acquaintance, my young friends; I am sure you will find among them some old person, some invalid, some one cut off from social pleasures, to whom life would be a tedious burden, if it were not for books. . . . If there is a real love of books, there is hardly a limit to be set to the knowledge that may be acquired from them without the aid of instructors, schools, or colleges. . . . A love for reading is with some merely the keen appetite of a superior mind. It would be felt under any circumstances whatever. But these are the few—the gifted. With most persons, the taste for reading must be cultivated. I believe there is no habit easier to form. Intelligent children, who live in reading families, with very few exceptions, are fond of reading as soon as they can read with facility. . . . But, if you have been so unfortunate as not to acquire this habit of reading early, form it now for yourself. If you are not capable of selecting your own books, take the advice of some friend who knows the wants of your mind. Resolve to devote a portion of every day, for a year to come, to reading; and then, if you forget your resolution, it will not signify. The love of reading will, by that time, surely take the place of the duty, and do your mind vastly more good.

“It is difficult to give any general advice as to the selection of books, because so much depends on the character, opportunities, and leisure of the individual. . . . It would be too painful for me to believe that there is one among you, to whom it is necessary to say, ‘Regard the bible as the first and best of books.’ But I fear, my young friends, that you read the bible much less than you should. The multitude of religious books and tracts have, in some measure, superseded it. You are attracted by a story, and, to get a little pure gold you receive a great deal of dross. Many of these books, I know, derive their spirit from the bible; many of them are useful and delightful; but let them take a subordinate place, and not encroach on the time you have to give to the reading of the bible. Do not be satisfied to drink from the stream which is imbued with much earthy material, when you can go to the pure fountain. . . . You will find your pleasure in reading the bible incalculably increased, if you will read it not only with a spirit submissive to its Divine instruction, but with your mind awakened, and eager to understand it. There are Dictionaries of the Bible that explain what is obscure; there are books that will give you much light upon the history, customs, and modes of life among the Jews. There are others that explain the prophecies, and show you their fulfillment. . . . If you can read but few books, be sure that the history of your own country is among them. Make yourself acquainted thoroughly with its institutions, its past and present condition, its extent, climate, laws, productions, and commerce. All these subjects come within our own sphere—they may be called domestic matters. Think you, if a woman was well instructed, well read on these topics, she would be as incapable of business, and therefore as dependent as she now is? . . . Next to the history and condition of your

own country, it is important that you acquaint yourselves with the history and condition of the countries whence your ancestors came. Then you will be able to compare your country with other countries, your own times with preceding ages. Thus informed, you will not fall into the common national vanity of fancying all knowledge, all virtue, and all progress, concentrated in the United States; nor into a worse error, a culpable ignorance of the advantages of your own country, and insensibility to them. . . . You will find well written and authentic travels a very improving and delightful kind of reading. You may lack money and opportunity to travel twenty miles from home, when for one or two dollars you may buy a book that will take you, with a well-instructed and all-observing companion, half over the world. Or, if you cannot expend the cost of the book, you may get it from a society, or district-library; or, borrow it from some kindly disposed person. . . . Good biographies are very improving books. The experience of others will often suggest models, advice, and reproof, that comes in the most inoffensive form. . . . Every well educated young person who has leisure for reading, should be well versed in English literature. . . . In the wide department of fictitious writing, let your consciences restrain and direct your inclination, and rectify your taste. . . . When our Saviour employed fiction in the parables of the prodigal son, and of the good Samaritan, it was, no doubt, to give to an important truth, a form that should be universally interesting and touching. Few will object to your reading such fictitious writings as do good to your hearts; and while you have such as Sir Walter Scott's, and Miss Edgeworth's, you have no excuse for reading the profligate and romantic novels of the last century, or the no less profligate and far more insidious romances of the present day.

"Next to 'what to read,' comes the great question 'how to read,' and I am not sure the last is not the weightier of the two. . . . No book will improve you which does not make you think; which does not make your own mind work. This is as certain as that the mill is not improved by the corn that passes through it, or that the purse is none the richer for the money that has been in it. . . . When you read, do not *take for granted*, believing, with ignorant credulity, whatever you see stated in a book. Remember an author is but one witness, and often a very fallible one. Pause in your reading, reflect, compare what the writer tells you with what you have learned from other sources on the subject, and, above all, use your own judgment independently, not presumptuously. . . . Knowing how short and precious time is, be more careful in the selection of your books than eager to read a great many. When you do read, read thoroughly and understandingly. . . . It is a good practice to talk about a book you have just read; not to display your knowledge, for this is pedantry or something worse; but to make your reading a social blessing by communicating liberally to those in your family circle, who may have less time and opportunity for reading than you have. You may often, too, by the superior knowledge of a friend, correct the false impressions you have received. Or, your friend may have read the same book, and then it is a delightful point of sympathy. . . . One word before I close this subject, as to the preservation of your books. If you love them, you will respect them, and unless you are incorrigibly slovenly and careless, you will not break off the covers, soil the leaves, and dog-ear the corners. . . . There is a common and offensive habit destructive to books, which we should not presume to caution any *educating* little girl against, if we had not seen it practiced by *educated* men. This is wetting the fingers to turn over the leaves. . . . Surely this should not be. When you borrow a book, put a cover on it before you read it. Use it with clean hands. Never lay it down on the floor, nor where it is exposed to be knocked down by the next passer-by. Do not readily yield to any one's request to lend it again, but return it promptly and punctually. Perform the borrower's duty strictly, and Heaven bless you with liberalers."—*Miss C. M. Sedgwick: Means and Ends.*

PLAN OF READING RECOMMENDED BY THOMAS S. GRINKE.

1. Before I commenced an author, I made myself thoroughly master of *the whole scheme of his work*, (if a table of contents and chapters enabled me to do so,) of the character of his whole system, of the *principles* on which he had separated and arranged the parts, and of their relation to each other, and to the whole. 2. I then studied the author in the following manner. After reading the first sentence, I meditated on it, developing the author's thought, as well as I was able; and reducing the whole, as nearly as possible, to a single, distinct, concise expression. I then read the second sentence, and did the same; and next compared the two sentences together, meditating on them, and gathering out of them their substance. Thus I went through the paragraph, and then reflected on the whole, until I had reduced it to a single sentence, containing its essence. I then studied the next paragraph in like manner; and having finished it, I compared the two together, and gathered out of them their substance. The same plan was followed in the comparison of sections with sections, chapters with chapters, books with books, until the author was finished. This may appear, at first sight, an exceedingly tedious process; but any one, acquainted with the nature of the mind, knows the wonderful facility that would soon be acquired by a faithful, patient adherence to this mode of study, even through a single chapter. 3. A third rule was to pass nothing unexamined, nothing without reflection, whether in poetry or fiction, history or travels, politics, philosophy, or religion. Gratitude will not allow me to pass unnoticed the vast advantages derived from a humble, patient, thankful perusal of Watts' admirable book on the Improvement of the Mind. Nor ought I to omit the three rules of Professor Whitaker, of Cambridge, given to John Boyse, one of the eminent translators of the Bible in the time of James the 1st, to study chiefly standing or walking, never to study at a window, and not to go to bed, on any account, with cold feet.

It is an error to suppose that a course of study is confined to the period of *youth*, and that when a young man has left school or college, he has finished his education, and has nothing to study but his profession. In truth he has done little more than treasure up some of the important materials, and acquire the elementary habits and discipline, which are indispensable to the continued improvement of his mind. If he expects to be a scholar, not in the *literary* sense of the word, but in a far higher and nobler sense, as a Christian, patriot, philanthropist, and public servant, in the state or national councils, in literary, benevolent, and religious institutions; if he means to be distinguished for his sense of duty, and his spirit of usefulness, for just principles, enlarged views, dignified sentiments and liberal feelings, for sound thinking, and clear, close reasoning, let him be assured that he has done little more than lay the foundations, in the school, or even in the college, up to the age of twenty. He must make up his mind to be a devoted student, in spite of his professional engagements, for ten years at least; until he shall have been able to deepen and strengthen, and enlarge, and elevate his mind, so as to fit himself for solid, honorable, permanent usefulness. Let him remember, that the *school* only prepares the *youth* to enter on the course of study, appropriate to the *young man*: and that the *college* only enables the *young man* to enter on the course of study appropriate to the *man*. Manhood has its appropriate course of study, and the difference between men arises very much from their selection and pursuit of a right course of study. Many fine minds, capable of enlarged and durable improvement and usefulness, are lost every year to the community, in which their lot is cast, to the country they are bound to serve, to the cause of religion, humanity, justice and literature: because they have failed in this great duty, they have neglected the course of study, appropriate to manhood. And here let it be remarked, that the *true* student never considers how much he reads, but rather how *little*, and only *what* and *how* he reads.—*Grimke on Science, Education, and Literature*, p. p. 54-56.

XVIII. REFORMATORY EDUCATION.

In our last number, [No. 4, or Vol. I. p. 608-624,] we submitted some remarks on the efficacy of domestic and agricultural training, in the reformation of juvenile delinquents, as illustrated in the experience of the Agricultural Colony, or Farm School, at Mettray, in France. We continue the same subject, by giving from Miss Carpenter's *Reformatory Schools*, brief a notice of

DUSSELTHAL ABBEY IN PRUSSIA.

A yet greater monument of the power of faith to overcome mountains of vice and ignorance exists in the Prussian dominions. Near Dusseldorf, on the right bank of the Rhine, rises Dusselthal Abbey. This is rather a refuge for wretched outcast children than a Penal Reformatory School, but it must not be passed over in our consideration of such, because it affords a striking instance of the power of Christian love, and family training, to overcome the greatest moral obstacles. The following short account of it is extracted from a small work entitled "*Illustrations of Faith.*"

"In 1816 Count Von der Recke, a member of a noble Prussian family, renounced the pursuits and pleasures belonging to his station in life, to devote his time, his fortune, and his talents, to the care and education of poor fatherless and destitute children, and of such grown up people as have sought his protection. His country had been recently devastated by war; numbers of unhappy children, deprived of their natural protectors, had become absolutely savage, living, when unable to gain any subsistence by begging or stealing, on wild herbs and roots. His father and he first received a few of these wretched little beings into their own home; then the father gave up a house for their use, and finally, by the sacrifice of his own fortune, and with the help of friends, he purchased an estate, which forms their present abode. Many were so confirmed in their wild habits, that any degree of restraint was intolerably irksome to them; they would run away and live in the woods, until compelled by hunger to return. Yet they were often successful in cases which would lead one to despair." The history of several is given in the narrative. "One of these, Clement, was supposed to be about 13 years of age; more depraved characters have been received into the asylum, but none so nearly resembling the lower animals in appetite and manners. It was not known where he came from, and he could give no account of his earlier life; his language was scarcely intelligible, and partook of the sounds of the four-footed companions of his infancy; among his most pleasurable recollections seemed to be his familiarity with the Westphalian swine, and his most frequent stories related to these favorite animals. While yet a child he had acted as swineherd to a peasant, and was sent to the fields to eat and sleep with the swine; but his unfeeling master, less attentive to the miserable infant than to his bristly charge, scarcely allowed him food sufficient to sustain nature; when hungry and faint, the poor little wretch actually sucked the milch sow! and to satisfy his craving appetite browsed upon the herbage! At his first reception into the institution, he would steal secretly on all fours into the garden, and commit great devastation upon the salad beds; nor was he induced, till after repeated chastisement, to give up his unwonted luxury. The sequel of the story is encouraging:—After unspeakable pains, the more amiable qualities of Clement began to develop; he discovered an uncommonly kind and obliging disposition, which gained him the affection of his companions, and by his humble and submissive deportment he became not only a favorite with his teachers, but an example to others who had previously enjoyed much greater advantages. He requited his benefactors by cheerfully employing his strength in the lowest services, and continued a faithful Gibeonite, a hewer of wood, and a drawer of water for the institution."

Such is the specimen of their scholars; and yet in an early report the Count and his friends could say,—"*Come, ye dear friends of humanity, come and see what the compassion of God has already done for this little flock, once wild, corrupted, debased beyond conception,—sunk almost beneath the level of the brutes. Oh! come and admire the wonderful transforming power of the gospel, which of these fierce lions'*

cubs hath made tame meek lambs. Come and rejoice over the modesty and obedience they evince; their love and attachment, not only to their teachers and benefactors, but even to strangers; see their industry, activity, and desire to be useful;—come listen to the harmonious songs with which they praise their Creator and Redeemer, and hear from their tender lips their gratulations over their deliverance! Especially come, oh! come, and unite with us in prayer and thanksgiving to our Lord and Saviour, who has never left himself without a witness among his creatures."

This will seem to many the language of enthusiasm; it is so if we apply that term to deep and ardent faith pervading our daily life, and inspiring with a quickening spirit even the daily drudgery of the work he had undertaken. *Ora et labora*, was his watchword. He had constant and harassing difficulties in raising the necessary funds. In many instances, his own ardor kindled that of others, and unexpected supplies arrived at a moment of need, which he received as a gift and encouragement from his Heavenly Father; but he had frequently trying disappointments,—still greater trials arose from the condition of the children.

"Great wisdom and prudence," continues the narrative, "as well as incessant labor and attention, were required in managing such children as have been described, even so far as to prevail on them to remain under any partial restraint, and to receive any instruction. Their ideas of right and wrong had to be corrected, and their sense of enjoyment rectified, even in the lower capacities of animal enjoyment. They had no distinct conceptions with regard to property, nor could they perceive any injustice in applying to their own use whatever suited their convenience, and might be easily obtained. Bodily privation, cold and hunger, were the sources of their several suffering; and their highest enjoyments the luxurious indolence of basking in the sunshine, or before a comfortable fire, or a nauseous gluttony indulged in to repletion. * * * The vitiated appetites of the children, till corrected, derived more gratification from gluttony at one time, and almost starvation at another, than from the equable and moderate supply received at stated hours, which the rules of a well ordered household provided. Nor was the properly prepared diet itself agreeable to their taste; they relished sour and wild fruits, raw vegetables, half-raw flesh, and a superabundance of bread, more than the same articles properly cooked, and fully but frugally administered. The discipline required was uniform, steady and strict, yet kind. To gain their affections, without indulging their early vicious propensities, was no easy task, but until this was accomplished, nothing could be done effectually for reclaiming such wayward vagabonds. The training is threefold; and while the object of each division is distinct, they are all three carried on together in harmony with one another. In the industrial department, mechanical aptitude and such practical habits as may tend to secure a livelihood are aimed at;—in the mental department, an endeavor is made to develop the powers of the understanding, and impress it with religious truth;—the moral department is conducted so as to awaken the conscience, to inspire the love of God, and to open the heart for the reception of the Holy Spirit."

"The Count considers the 220 persons collected together within the walls of Dusselthal, whether as scholars, servants, or teachers, as one family; he lives among them as a father, taking the most lively interest in every thing that concerns their welfare, bodily or spiritual;—he shares their joys and sorrows pointing both to the same great end."

Did space permit, it would be interesting to watch him in his family at the Christmas fete,—at the funeral of his little daughter, which consecrated their cemetery—"Das Himmels-garten." But we must conclude this brief account of Dusselthal, and can not do so better than in the words of its founder, which so vividly exhibit the spirit in which it is conducted.

"Every thing in Dusselthal tends, either directly or indirectly to the promoting the kingdom of God; it is this that makes all my labors so pleasant. Every walk, every step, every employment, all are connected with the kingdom of God; and, oh! it is blessed to labor for that kingdom. I desire life only for this end!"

It is a mournful sequel to this touching record of devotion and love, that the Count's health and strength have been exhausted by his exertions, which have not been supported by others as they ought. The energy and talents which should have been left unimpaired for the sustaining of the spiritual life of the establishment, have been wasted by pecuniary difficulties, and now the inhabitants of the neighboring town feel obliged to do what they should ungrudgingly have done before, form a regular fund for the support of the establishment. It is individual love and zeal which alone can rightly guide such institutions, but this *must be sustained and encouraged by the aid of the many.*

XIX. EDUCATIONAL MOVEMENTS AND MISCELLANY.

ENGLAND.

BENEFITS OF THE SCHOOL OF MINES.

It has been proposed in England to transfer the "department of Science and Art," now organized under the Board of Trade, to the office of the Minister of the crown who may be charged with the education of the people.

This proposition called forth, in January last, a letter from Sir R. I. Murchison, Director General of the Geological Survey, in which he objects to such a transfer, so far as it relates to the geological survey and its affiliated museum and school of mines, all of which are now included in the department of Science and Art.

In this letter he thus speaks of the benefits of the school of mines. "The effects which have resulted from our teaching have been beneficially felt, both at home and through the most distant regions, inasmuch as our school has already afforded geological mining surveyors to many of our colonies in the East Indies, Australia, and the Cape, whilst at this moment the legislatures and governments of the West Indies are petitioning for mineral surveyors of their respective islands, and Her Majesty's government joining, as I am happy to say, in this enlightened and liberal movement, have applied to me to recommend suitable persons for such employments.

Next to the officers of Her Majesty or the Hon. East India Company's service have spontaneously taken advantage of our Scientific Instructions, which they know will give them advantages in foreign lands, instruction, too, which they obtain from us at half the usual charges, who can not be had elsewhere in this country.

A striking proof of the interest attached to the useful instruction afforded by our institution, is also given by the presence of 600 worthy men who attend the courses of evening lectures, delivered gratuitously by our professors; the tickets being so sought after that they are applied for and distributed within five hours from the commencement of their issue."

His objection to the proposed transfer is thus stated: "Liberal as the ministers may be under whose control the general education of this nature may be placed, there is little doubt that in this country, the

greater number of its instructors will be drawn from among such of the graduates of the ancient universities, as both by their training and position must be, to a great extent, disqualified from assigning their due importance to the practical branches of science. Such persons may be eminent in scholarship and abstract science, and yet ignorant of the fact that the continued prosperity of their country depends upon the diffusion of scientific knowledge among the masses. They may, with the most sincere and earnest intention, not only fail to advance, but even exercise a retarding influence on such diffusion, and may object to a course of study which, as now pursued, is irrespective of religious teaching. Experience has shown in how sickly a manner practical science is allowed to raise its head under the direction of those persons whose pursuits are alien to it; whilst in every land where it has had due support, the greatest benefits have resulted."

EDUCATION DEPARTMENT.

The proposition referred to in the foregoing article has passed into an Order of Council, approving a report of the Privy Council, recommending,—1. That in future the Education Department, (so to be called,) be placed under the Lord President of the Council, assisted by a member of the Privy Council, who shall be Vice-President of the Committee of the said Privy Council on Education; and 2, that the Education Department include the education establishment of the Privy Council-office, and the establishment for the encouragement of science and art, now under the direction of the Board of Trade and called "The Department of Science and Art." Both these establishments are to be under the orders of the Lord President. The new Education Department is to report on such questions concerning education as may be referred to it by the Charity Commissioners, to inspect the naval and regimental schools, and to examine into the instruction in nautical science given in the navigation schools connected with the Department of Science and Art.

OXFORD COMMEMORATION.

The following account of the "great day of Oxford,"—a sort of 4th of July of the undergraduates of the University, is copied from a report in the London Times:

"The series of forms and festivities with which it is the time-honored custom of Oxford to celebrate the memory of its many "Founders," culminated yesterday, the 4th instant, in the grand day, emphatically the "Commemoration," under more than usually interesting circumstances. The usages of the week always curiously blend the serious and the gay; on the sermon follows the boat race, the lecture is succeeded by the flower show, the orations by the concert; but this year Oxford has deferred, for a brief space, its rejoicings on the conclusion of peace, and thus a general illumination added a display of national feeling on a great present event, to the more local expressions of gratitude to the past. Nor has the war itself been unfavorable to the commemoration of the year; one of the last important events of the conflict gave to the military history of the nation a name that will forever occupy a foremost place in it; and much, it may be even said, a very great part of the interest with which the proceedings of yesterday were invested, sprang from the announcement that Sir W. Fenwick Williams, the defender of Kars, was among those on whom the University purposed to confer its honors. Indeed, the list of the recipients of this mark of distinction

indicates how deeply the feeling of the hour reflects the emotions of the short but eventful period the country has just passed through. This list includes three Generals, of whom two have borne prominent, if not equal parts in the military operations; two Admirals, of whom nearly the same may be said; next there is the representative of the Sultan, in whose cause the allies drew the sword, Musurus Bey; and the Earl of Clarendon, the Minister and negotiator of England who signed the treaty of peace.

The anxiety to gain admission to the Theatre was excessive, and taxed to the utmost the kindness of all those privileged to pass a friend through the barriers, which were guarded with almost military severity. The ladies and the under graduates had a priority in this respect; the upper gallery, it is needless to say, was rapidly filled by the latter. Anything and everything was cheered, as usual, and anybody at all objectionable, was duly apprised of the sentiments of the Upper Thousand toward them. Some local notabilities were received in a manner indicating they were better known than liked in the higher regions; but on the whole, a commendable amount of good temper was exhibited. The selection of ladies' bonnets commenced early, but the positive colors were soon exhausted, and we observe that the neutral tints escape notice, being difficult to define with sufficient exactness. So, when the cheers for "the Red, White, and Blue" had been given, "the lady with the fan," and "the lady with the opera-glass" were picked out; as there were scores of glasses and hundreds of fans, this was also a very general compliment. Then came cheers for individuals, known and unknown. "Omar Pasha" fell flat; so did "the Sultan," they seemed rather abstract ideas; but "Musurus" obtained great success. So did "the Earl of Clarendon;" "Lord Stratford" found no response, and to "Cardigan" there were dissentients. The cheers for Prince Albert were unanimous, and for "General Williams," enthusiastic. Between the expression of private antipathies and public homage, the time wore on, till, at 11 o'clock, the procession of University authorities, in all the splendor of robes and maces, entered the Theatre. The Chancellor, (the Earl of Derby,) took his seat, having his Royal Highness, Prince Albert, on his right hand, and Prince Frederick William, of Prussia, and the Prince of Baden on his left. The principals of the several colleges and the candidates for the honors of the day were around and below them.

The Chancellor then read the list of those on whom the degree of D. C. L. was to be conferred, *honoris causa*; they were:

His Royal Highness, Prince Frederick William, of Prussia.

His Royal Highness, the Prince of Baden.

Count Bernstorff.

His Excellency Musurus Bey, Minister Plenipotentiary of His Imperial Majesty the Sultan.

The Right. Hon. the Earl of Clarendon, K. G., G. C. B.

The Right Hon. the Earl of Elgin and Kincardine, K. T.

The Right Hon. Lord Ashburton.

Admiral Sir Edmund Lyons, Bart., G. C. B., K. C. H.

Rear Admiral the Hon. Sir R. Saunders Dundas, K. C. B.

Sir Henry Holland, Bart., M. D., F. R. S.

Major-General Sir Collin Campbell, G. C. B.

Major-General Sir W. Fenwick Williams, of Kars., Bart., R. A., K. C. B.

Major-General Sir Harry D. Jones, R. E., K. C. B., Governor of the Royal Military College, Sandhurst.

Lord Abercorn.

Dr. Sandwith, the English Physician at Kars.

Dr. Barth, the African Traveler.

The name of the Prince of Prussia was received with a loud and hearty burst of applause; so was that of the Prince of Baden; the same token of recognition and approval was bestowed on the Earl of Clarendon, the Earl of Elgin, and Lord Ashburton. The cheers for Sir Edmund Lyons and Sir C. Campbell were very hearty; indeed, all the names were well received; but that of General Williams was welcomed by a perfect storm of applause, which lasted for several minutes, though the Chancellor laid particular emphasis on the words "*etiam absens*." It was generally regretted that this gallant officer was not present to witness the enthusiasm his name excited in the hearts of so many of his countrymen. It was

a tribute of which any man, whatever his services, might be proud. The names were then proposed *seriatim* to the doctors and masters by Dr. Travers Twiss, Regius Professor of Civil Law; the under graduates, as usual, volunteering the reply of "*placet*."

BELGIUM.

CHARITABLE CONGRESS AT BRUSSELS.

A Congress of gentlemen from different nations, interested in the public and private administration of charity, was held at Paris, in July, 1855.

A second meeting is to be held in Brussels, commencing on the 15th of September next, the object of which is thus stated in the official programme: "to place in personal relations those who, in different ways, are occupied with the amelioration of the laboring and indigent classes of society, to afford the means of comparing institutions of mutual benefit, of charity, and of public utility in all countries; and, finally, to elucidate, so far as possible, various social problems."

Under the last named head the various subjects proposed for discussion are enumerated with some detail. We specify the more important topics.

1. Condition of the working classes.
2. Means of subsistence.
3. Promotion of health, character of different occupations, lodging houses, baths, &c., &c.
4. Education and Instruction, nurseries, infant schools, primary schools, Sunday schools, industrial schools, popular circulating libraries, popular amusements, gymnastics, &c.
5. *Institutions de provoyance*, savings banks, mutual aid societies, various kinds of assurance.
6. Pauperism, charitable institutions, legislation, aid at home, hospitals, dispensaries, asylums &c., for the aged, incurable, orphans, foundlings, idiots, blind, deaf and dumb, laws &c., for extinction of begging, *Monts de piete*, &c.
7. Agricultural colonies, reform schools, farm hospitals, &c.
8. Crime, penitentiary systems, cellular prisons, care of released prisoners.
9. Increase of population, emigration.

These questions or topics cover, it will be seen, nearly the whole field of charitable economy, and are too numerous for full discussion in any single congress. Impressed with this fact, the *Société d'Economie Charitable*, of Paris, in accepting the invitation to participate in the meeting at Brussels, decided to limit itself to the examination of four topics, viz. :—

1. Practical application of the principles of association to relief against sickness, old age, want of occupation, to the provision of food, nourishment, &c., the acquisition of property, &c.
2. Organization of museums of domestic economy, and relations to be established between the museums of different nations.
3. Amelioration and extension of popular education, measures to be taken against intemperance and debauchery, popular diversions and amusements.
4. Emigration from cities to the country, to colonies, and to foreign lands.

HONDURAS.

Honduras has two universities, one established in the city of Comayagua, and another in Tegucigalpa. They have, nominally, professorships of law, medicine, and theology; but, in fact, their course of instruction is little in advance of the common schools of the United States. In the department of natural sciences,

and in those studies of greatest practical importance to the development of the resources of the country, chemistry, engineering, the higher mathematics, they are entirely deficient, and much behind those of Nicaragua, San Salvador, and Guatemala. Indeed, most of what are called educated men in the state have received their instruction in foreign countries, or at the institution just named. Efforts have been made to elevate the character and efficiency of these establishments in Honduras; but, they have been too feeble to produce any important change. Still the fact that they have been rescued from a state of entire suspension, and are not deficient in pupils in the elementary branches of knowledge, gives encouragement for the future, and, with the restoration of peace and the return of national prosperity, there is reason to believe they may become an honor to the country.

The Lancasterian system was introduced into Central America during the existence of the Federation, and has been continued, with some modifications, in the various States. The requisite data for estimating the public or private schools of Honduras do not exist, since such few returns from the Departments as have been incidentally published in the official paper are confessedly imperfect.

On a very liberal estimate, there may be four hundred schools in the State, with an average attendance of 25 scholars each, or an aggregate of 10,000 pupils, of all classes, in a total population of 350,000.

There are no libraries in the State worthy of mention, and, beside the Government Gazette, no newspapers. There are several presses, but they throw off little except acrimonious political pamphlets, or handbills of a personal character.

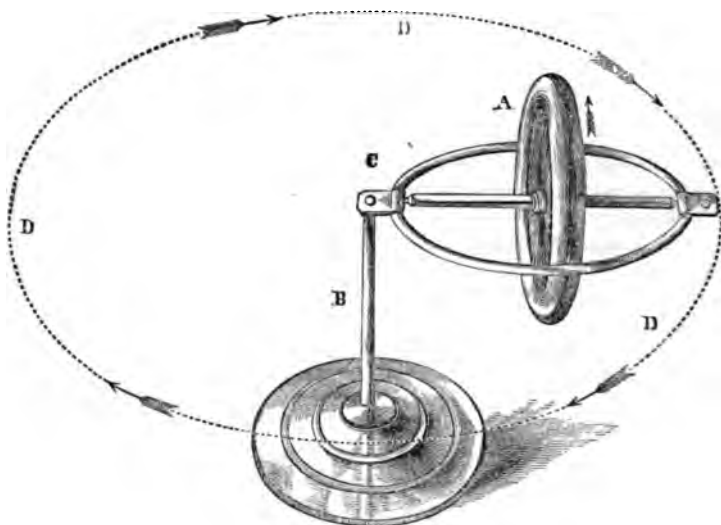
It follows, from these facts, that the ignorance of the people at large is profound and melancholy.

E. G. SQUIER, *Notes on Central America.*

UNITED STATES.

We have received Legislative Documents, or the Annual Report of the Superintendent, or Commissioner of Public Schools, or Board of Education for the following States, viz.:—Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Virginia, North Carolina, Georgia, Alabama, Louisiana, Texas, Illinois, Indiana, Wisconsin, Iowa, and Ohio,—from which we purpose to make, in our next number, a SUMMARY OF THE CONDITION AND PROSPECTS OF PUBLIC INSTRUCTION IN 1855–56, in the language of those who are entrusted with its administration. The article will be long, but will contain the latest and most reliable view of the state of the common schools, and the efforts which are making, or which are proposed for their improvement.

THE GYROSCOPE, OR MECHANICAL PARADOX.



The simple apparatus represented in this figure consists of the wheel A, which has a heavy rim, and is suspended in a brass ring, upon steel points, which enter the ends of the axis. The two cars attached to this ring, at the ends of the axis, are indented, to receive the point of the standard, B.

If a rapid rotation is given the wheel A, by winding a cord on the brass spool placed on the axis, and pulling it vigorously, as a boy would spin a top, (the ring being firmly held,) the wheel seems to become endowed with a new power, which, apparently, puts at defiance the laws of gravity. When one of the cars is placed on the point of the standard, B, and the other car allowed to rest on the finger, supporting the axis in a horizontal position, nothing singular is observed. If the finger is slowly lowered, the end of the axis will fall with it; but, if the finger be drawn away *horizontally*, leaving the end unsupported, the instrument, with marvelous independence, will proceed to take care of itself, and will not only maintain its horizontal position, but, at once, commence revolving around the standard on which it rests. The entire machine, which weighs over a pound, remains suspended *almost* on nothing, and a half pound weight may be hung on the *unsupported end* without changing its inclination.

If the outer end is elevated or depressed by the hand, the axis *retains the inclination* last given it, except that, if above a horizontal plane, it will gradually *rise* while the force of the rotation continues sufficient, or, if below, it will slowly fall.

The same phenomena will occur if the Paradox is suspended by a cord fastened to the universal joint on one of the ears. This mode of use is safest, as the delicate mechanism will be materially injured by falling; there is less friction, however, when the ear rests on the iron point.

It will be observed that, when the wheel rotates in one direction, the machine revolves in the *opposite* direction, as indicated by arrows in the figure. If the horizontal revolution is stopped, the Paradox instantly falls.

If the ring is held in the hands by the ears, and one end *suddenly* raised or lowered, an unexpected resistance is encountered, and a strong tendency to revolve is manifested; or, if held firmly by one ear, and the hand containing it allowed to fall from a horizontal position, the same tendency to revolve will be felt. If suspended by a cord, fastened to the joint on one ear, and swung like a pendulum, it will be found to describe an ellipse; in fact, it will be impossible to swing it in a straight line.

A socket, with branching arms, forming a semi-circle, accompanies each instrument, (though not shown in the cut.) If this socket is placed on the standard, and the Paradox suspended between the arms, by pivots placed in the ring at right angles to the axis, other singular phenomena may be observed.

1. When the Paradox is accurately balanced on the pivots, and the wheel set in rapid motion, the axis will continue to point in one direction, even though the *standard* be turned entirely round. A more striking illustration of this is seen by placing the socket on a wire at the end of a lever. If the lever be made to describe a horizontal circle, the axis of the wheel will be found to point in the *same direction* in every part of the circle. Is not this precisely analogous to the parallelism of the Earth's axis, in her revolution round the sun?

2. If, when the Paradox is suspended as in the preceding experiment, a weight is hung on one ear, the paradox *does not lose its balance*, but immediately begins to revolve horizontally, always stopping the instant the weight is removed. If the weight is hung on the other ear, the revolution is in an opposite direction.

3. If a slight horizontal motion is given to the arms, thus changing the plane of the wheel's rotation, the axis of the wheel will change vertically, and by a few movements of the arms *backwards and forwards* a *vertical revolution* of the Paradox will be produced.

This curious instrument is attracting much attention from scientific men; but, the causes of its action are not yet fully explained. Whoever shall account for them satisfactorily to himself, or shall discover new phenomena, will confer a favor by informing the undersigned. The originator of the Mechanical Paradox represented in the above cut, is Mr. Abner Lane, of Killingworth, who has arranged with the Holbrook School Apparatus Co., of Hartford, Conn., for its manufacture and sale. It will be sent, by express, to any person remitting the price, \$5.00, \$3.50, or \$2.50, according to style, to

F. C. BROWNELL, Sec'y
Hartford, Conn.

XX. BOOKS ON EDUCATION.

EDUCATIONAL NOMENCLATURE AND INDEX.

WE have on our table a number of recent publications, and more in our Library, of older date, and of greater value, from the American, English, French, and German press, on the history, organization, administration, instruction, and discipline of schools of different kinds and grades, and on the principles and practice of education, to which we shall, from time to time, call the attention of our readers. In doing so, we propose not only to give the title-page and a brief description of the book or pamphlet, but, in most instances, if the publication is a valuable contribution to the literature of education, the CONTENTS; and, if the work consists of several numbers or volumes, an Index to the principal topics treated of.

These contents and indexes will ultimately be included in a volume to be entitled "EDUCATIONAL NOMENCLATURE AND INDEX; or an explanation of words and terms used in describing systems and institutions of education, in different countries, with reference to books and pamphlets where the principal subjects connected with the organization, administration, instruction, and discipline of schools are discussed."

This volume will include an INDEX to the principal educational periodicals and official reports of Superintendents of public schools in this country. There is a vast amount of information as to the past history and present condition of schools, public and private, elementary and superior, general and special, as well as of able discussions of the principles and practice of education, scattered through occasional addresses, school periodicals, legislative and departmental reports and documents, which are not available to persons engaged in educational investigations, from their not having access to those publications, or not knowing any reliable and convenient source of information respecting their contents.

As an example of the thoroughness with which the most important publications on the subject of education and schools will be analyzed and indexed, we publish in this place an Index to the twenty-six volumes of Proceedings and Lectures of the American Institute of Instruction, which was originally prepared for the purpose of exhibiting the usefulness of that Association in the variety of educational subjects and topics presented and discussed by eminent teachers and writers at its annual meetings since 1830.

We shall give an Index to the five volumes of the American Journal of Education, from 1826 to 1830, and the nine volumes of the American Annals of Education, from 1831 to 1839, in an early number; also, to the fourteen volumes of the Massachusetts Common School Journal; and, to the Educational Statistics of the American Almanac.

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INTRODUCTION TO THE STUDY OF ART, by M. A. Dwight. 12mo., New York: D. Appleton & Co.

There are various indications in our country that the love of the Fine Arts is continually advancing. Costly paintings, by ancient and modern artists, find ready purchasers; print shops are on the increase; a demand is felt in manufacturing communities for good designers; and, finally, many schools, both private and common, have begun to consider drawing as a proper part of even an elementary education.

Many persons, however, interested, as teachers or scholars, in the study of art, have felt the need of a good manual, in which the principles of taste, and the laws of design should be briefly and clearly set forth. Such a hand-book has now been prepared by Miss Dwight. Herself a thorough scholar, an admirer of all that is beautiful in nature and art, and, more than that, a successful teacher of practical drawing, she has written a volume which will be welcome in any family or school where the crayon has found its way, or where an inquiring mind is seeking for those principles by which to appreciate, with discriminating taste the varied productions of human genius.

As her book is only an "Introduction to the Study of Art," it is mainly devoted to the laws of line and perspective, light and shade, color, composition, expression, and kindred topics. There are valuable introductory chapters on the anatomy of the human frame, and a full and excellent statement of the meaning of symbolic colors and emblems. Should this volume meet with the success which it deserves, there are reasons to expect that it will be followed by other works of a corresponding character. Its general introduction into our higher schools and especially into seminaries for young ladies, would awaken a love for artistic pursuits, where it does not yet exist, and would correct the taste and improve the judgment of those who are already alive to the study of the beautiful.

EDUCATIONAL MEETINGS IN AUGUST.

THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF EDUCATION will hold its Sixth Annual Meeting at Detroit, Michigan, commencing on Tuesday, August 12th, at 10 A. M., and continuing in session through the following Wednesday, Thursday, and Friday. Introductory Address by Henry Barnard, the retiring President. Papers will be read and addresses delivered by Dr. Tappan, Prof. Boise, Prof. Haven, of the University of Michigan; Prof. Gillespie, of Union College; Pres. Dr. White, of Wabash College; Rev. Dr. Spees, of Milwaukee; Prof. Turner, of Illinois College; Prof. Barnard, of University of Mississippi; Pres. Dawson, of McGill College, Montreal; Prof. Cooke, of Bloomfield, New Jersey, and others.

THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE will hold its Tenth Annual Meeting at Albany, New York, commencing on Wednesday, August 20th. The exercises, it is understood, will be of a more than ordinarily interesting character.

THE AMERICAN INSTITUTE OF INSTRUCTION will hold its *Twenty-seventh Annual Meeting* at Springfield, Mass., on the 19th, 20th, and 21st of August. Introductory Address by President Walker, of Cambridge. [We have not received the Programme of Exercises.]

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THE
American Journal of Education.

No. VI.—SEPTEMBER, 1856.

I. COMMON OR PUBLIC SCHOOLS IN THE UNITED STATES.

HAVING exhibited in the Journal for March and May, the magnitude of the educational interest of the United States, in a series of statistical tables made up from the census returns of 1850, showing the aggregate and juvenile population of the several states, the number of educational institutions of different grades, with their teachers, pupils and annual cost, the number of persons returned as not having received the lowest form of instruction; and having in a subsequent number presented the statistics of institutions supported wholly or partly by the avails of public funds or taxation in each State, we now proceed to give the condition of the Common or Public Schools, with the means and suggestions for their improvement, as set forth in extracts from official and legislative documents and addresses. These extracts should be read in connection with the statistics of population, &c., before given.

ALABAMA.

Report of the Superintendent of Education [W. F. Perry] of the State of Alabama, to the Governor, Oct. 1, 1855. 36 pages.

This is the first Report of the Superintendent of Education, and is confined to an account of preliminary operations.

DIFFICULTIES IN ORGANIZING AN EFFICIENT SYSTEM. The building up of an efficient educational system, adapted to the various wants and circumstances of a large community, has never been accomplished, hitherto, but by the patient, unremitting efforts of successive years. The experience of other states abundantly proves that liberal appropriations and legislative enactments can not, of themselves, impart to such a system that vitality and energy which are essential to its ultimate success. It must rely mainly for these upon enlightened public opinion,—upon a rational, all-pervading interest on the subject, which springs not up spontaneously or from sudden impulse, but is itself the result of a sort of process of education, by which the whole people are brought to esteem the proper training of those who are to come after them, as their paramount duty and highest earthly concern.

EDUCATIONAL FUNDS. The two funds placed under his control, under the general title of Educational Fund, were created at different times, were subject to different laws, and sustained different relations. One was the property of the State, consolidated and unchanging in amount; the other belonged to the town-

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ships in their individual capacity, distributed among them in all possible amounts, ranging from a few cents per annum to many hundreds of dollars, and was constantly accumulating. A small portion of the latter was still under the management of the banks; another and much the larger was in the treasury; a third, in the form of sixteenth section notes, was found in the office of the Comptroller of Public Accounts, and scattered over the State in the hands of trustees, withheld under special laws, or in defiance of law.

To unite these two funds thus situated, and bring them under one general system of accounts which would do full justice to all, and more than justice to none, cost an amount of thought and labor, which he had not been prepared to expect, and which few, perhaps, can now realize.

VISITATION BY SUPERINTENDENT. The superintendent has thus far found time to traverse forty-five out of fifty-two of the counties, generally delivering two addresses in each, and has it in contemplation to visit the remainder before his term of office expires. These visits, though hurried, and often unavoidably made at the most unfavorable times for obtaining audiences, and enlisting public attention, are believed to have been attended with advantage by no means inconsiderable.

RESULTS OF PERSONAL OBSERVATION. That which most prominently strikes the attention of one favored with such a field of observation, is the total inadequacy of the means hitherto employed, ever to accomplish what all acknowledge to be desirable—a general diffusion of knowledge.

Alabama, it is true, can point with just pride to her colleges and high schools, her institutes and academies. Perhaps in no State of the South have individual citizens and communities exhibited more liberality of sentiment. No where have greater personal exertions and sacrifices been made to advance the interests of education. The undersigned would be the last to stifle such sentiments, or to disparage the benefits which have resulted from those sacrifices and exertions. The melancholy reflection still, however, obtrudes itself, that three-fourths of the youth of the State have hitherto either gone without instruction entirely, or have been crowded into miserable apologies for school-houses, without comfortable seats, without desks or black-boards, often without the necessary text-books, and still oftener without competent teachers.

It would be the grossest arrogance to say that the adoption of the present system has supplied all these wants. It has certainly imparted a powerful impulse to the common school operations of the State. It has increased the attendance upon most of the schools previously kept up, and has led to the establishment of many, where none before existed. But the improvement thus far, is in the *extent* to which educational facilities have been diffused, rather than in the *character* of the facilities themselves. The increase of the school fund may have crowded the houses, but it has not always dispelled blank cheerlessness from its old dominion. It has not led to the adoption of the policy which controls men under an increase of private gains—to pull down the old barns and build greater. It has added largely to the demand for teachers' services; but it has not imparted the necessary qualifications to those who are engaged in the mighty field of labor. "Owls and bats" are still employed "to teach young eagles how to fly, because they will work cheap."

There is another conviction to which the undersigned has been forced by extensive intercourse and correspondence with the masses of the people. It is that the present educational movement is not in advance of public sentiment—that the people of the State, by an overwhelming majority, are favorable to the principle of public education, and are prepared to sustain the legislature in all judicious measures for giving additional efficiency to the system already in existence.

REASONS FOR PERSEVERANCE. The following propositions are, in conclusion, respectfully submitted, as containing some of the more prominent considerations in favor of the permanent adoption of that line of policy by the State:

1. The intervention and effort of society in its organized political capacity, constitutes the only means by which a universal diffusion of knowledge can ever be secured. Neither the history of the past, nor the circumstances of the present, reveal any other agency adequate to its accomplishment. The question of a continuance or discontinuance of such effort here, amounts to a direct issue between general intelligence on the one hand, and wide spread, deplorable ignorance on the other.

2. No obstacles in the way of the ultimate attainment of this great object exists in Alabama, which have not been encountered and triumphed over in other States. Indeed the achievements of the present year will challenge comparison with what has ever been accomplished, elsewhere, with the same means and in the same length of time.

3. General intelligence and virtue are included in the very idea of a govern

ment where the people are the great depositories of power, and the ultimate tribunal to which all questions of national policy are referred. "They who govern, must know how to govern; and they who govern rightly must themselves be right." Mr. Mansfield says, "There is a positive antagonism between the possession of civil power requiring the highest exercise of reason, and the want of that intelligence and integrity, which are essential to the right use of reason itself."

It will not be considered improper to introduce in this connexion, the opinion of one of the founders of the government, and the great republican philosopher of his day. Mr. Jefferson, in a letter to Col. Yancey, January 16, 1816, uses this language: "If a nation expects to be ignorant and free, in a state of civilization, it expects what never was and never will be. The functionaries of every government have propensities to command at will, the liberty and property of their constituents. There is no safe deposit for these but with the people themselves; nor can they be safe with them, without information. When the press is free and every man able to read, all is safe."

4. Aside from the overwhelming motives of self-preservation, which apply to nations as to individuals, every consideration of sound domestic economy demands at the hands of government a liberal encouragement of the means of education. The State that scatters broadcast the seeds of knowledge most profusely, will ever reap the richest harvest of golden fruit, in the increased thrift and industry, prosperity and happiness of its people.

5. And finally, it is not an invasion of the rights of property for the government to assess upon each individual his share of the expenses of educating the children of the community, up to such a point, as the nature of the institutions under which he lives, and the well-being of society require.

To perfect the system of Public Schools, the Superintendent recommends the appointment of a single Commissioner instead of the Board, for each County; the publication at the capitol of a Monthly Educational Journal; the holding of Teachers' Institutes, and the establishment of a State Normal School.

ARKANSAS.

We have received no school document, official or legislative, relative to the Public Schools of this State.

CALIFORNIA.

Fifth Annual Report of the Superintendent of Public Instruction [Paul K. Hubbs] of the State of California. January 17, 1866.

CONDITION OF PUBLIC SENTIMENT. Public sentiment was never more thoroughly aroused than at the present time, in respect to the subject of education. From the Colorado to the Klamath, from the Nevada Alps to the ocean, the most distinguished citizens of this State are laboring to extend the influence and elevate the condition of the common school.

With this healthy state of the public mind, and in view of the fact, that we are, in respect to common school education, not only very far in arrears to our Atlantic brethren, but also to civilized Europe, there never has been a time when the support of the representatives of the people to this great effort was more imperiously called for.

SCHOOL FUND. We are nominally possessed of a large school property, but practically do not receive enough income to pay the salaries of three hundred and six teachers for two weeks' work in the six months of their labor, for which the small sum of \$28,269.60 was apportioned by the State Board of Education on the 1st instant, being the entire income to the State School Fund for the past half year.

SCHOOL ATTENDANCE. The Annual Report from this department to the Legislature of 1856, held this language; "Three-fourths of the children of our State are growing up devoid of learning to read or write." "So far from expecting a future increase proportioned to the imminent wants of this great community, it is evident that without radical and positive change in the supplies, by legislative action, we shall have a meager return for the present year from the schools, many of which are now being abandoned for lack of support." The Legislature of 1855, did not extend the aid solicited from this department, and many schools have been abandoned for lack of support. In the city of San Francisco, where the effort to sustain common schools has deservedly won her a world-wide reputation, (and as a natural consequence amid all her disasters, put her bonds at a premium,) in that

city there is a daily average of 2,938 children reported out of school; and in the county districts of San Francisco, forty-five only of four hundred and nine are in the school. In Stockton, nearly one-half are in daily average attendance. Sacramento City, two in five; and Marysville, but one in three—no doubt in many cases owing to the wilful neglect (if so mild a term can properly be used,) of the parent or guardian. In some places, as will appear by the appendix, but one in seven are in daily attendance at the school.

Of the 26,170 resident children reported, 6,422 form the daily average attendance at the common schools. The private schools will not probably increase the number beyond 7,000 in all. What is to be done with the 19,000? They are under the charge of this department, subject to legislative action.

SCHOOL LANDS. It is the sheerest folly to talk about our great resources in public school property, whilst no proper measures are taken to secure it from loss, much less to realize the income due from it.

The Act of Congress in relation to survey and pre-emption, (March 3d, 1853,) provides, that two sections of every thirty-six, when surveyed, be set apart for the school purposes of the township.

Of the 500,000 acres donated under the Act of Congress, April 4th, 1841, and diverted by our Constitution to school purposes, the greater part remains undisposed of.

The aid to the University that we hope some day to see established, from lands donated by the General Government, like that from nearly all the school lands, continues a deferred hope, upon which the mind may look at as great a distance as to realise little else than the clouds that environ it.

SEMINARY LANDS. The Seminary lands awaiting only the U. S. surveys, to be fully and conclusively located, I recommend to be placed at once under the entire title, control, and management of the Board of Regents of the University, which I can not doubt the Legislature will provide for at an early day, in "An Act to establish the California State University."

SCHOOL LAW. We have no free school system. Cities are empowered, under certain restrictions, to raise means, and, to a certain extent, maintain free schools. The counties may or may not levy a limited tax, to maintain schools, depending upon the views of the Board of Supervisors, a board that has done more good in checking extravagant county expenditures, than was anticipated, even by the best friends of the supervisory system; but with heavy old county debts too often pressing upon them, they are timid, and too frequently parsimonious in respect to the schools. In some densely settled counties, no tax whatever has been levied for school purposes; moreover the supervision of the accounts for school expenditure of the county, is not as thorough by the Board of Supervisors as could be desired, otherwise the returns to this department would be more explicit and satisfactory.

SCHOOL BOOKS. Immediately upon entering upon the duties of this office, I designated, in accordance with the Act, a uniform series of books to be used in the schools. The recommendation has not been sustained, and the Superintendent has no power to enforce it. The books designated comprised the very latest and most improved works used in the Atlantic States; but our bookstores were so crowded with the refuse books thrown out at the East, at low prices there, at least, that the most valuable works, adapted to the advanced progress of the common school system, could scarcely be had.

SECTARIAN ACTION. The Superintendent has no adequate power under the existing law, to check as should be done, any sectarian bias or control, exercised upon the public schools. A sectarian war is in embryo, which if not quelled at once, will, combined with other causes, produce a lingering death, slowly but surely, to popular education in this State. The rejection of well qualified teachers at one time, because of their religious faith, produces a reacting opposite extreme at another time, and the whole catalogue of sects become excited to have their own members used as teachers, and their own churches as school houses. This is all wrong, and the result will be disastrous.

DENOMINATIONAL COLLEGES. Whilst we thus maintain intact, steadily but firmly, the proper administration of the common school system, let us not undervalue the efforts making by, emphatically, the good men of our land, in rearing colleges worthy the support of the State, though established by religious influence and controlled by religious domination. Three colleges have been chartered in accordance with law during the past year: one at Santa Clara, under charge of the Methodist Society; one at Oakland, under charge of the Presbyterian Church, and one at San Jose, under care of those who profess the Catholic faith. They

are all struggling in their infancy, but destined to much good. I recommend that a liberal appropriation be made to each of these colleges.

CONNECTICUT.

Report of the Superintendent of Common Schools [John D. Philbrick] to the General Assembly, May, 1886. 198 pages.

This document, besides the Annual Report of the Superintendent, embraces an Appendix of great value, viz., Reports of Visits and Educational Lectures by Agents appointed by the Superintendent; Extracts from School Visitors (Local Committee of Supervision) Reports; An Educational Tract—a Teacher's Appeal to the Parents of his Pupils; Circular to School Visitors respecting certain proposed changes in the School Laws; An Argument for Free Schools from Horace Mann's Tenth Report as Secretary of Massachusetts Board of Education; Places and Descriptions of School-houses; Specimens of Rules and Regulations for Schools; Inquiries addressed to School Visitors; Tables of Returns by School Visitors; List of Teachers' Conventions or Institutes held in Connecticut since 1853.

LABORS OF SUPERINTENDENT. These include personal attention and teaching in the Normal Schools; preparation for and conducting eight Teachers' Institutes; delivering addresses in different counties; answering questions as to the construction of the School Law; deciding claims for payment of public money forfeited; consulting with teachers and committees; assisting in a revision of the School Law, and in editing of the Common School Journal. It is not to be wondered at, that the health of the Superintendent should have broken down under these manifold and arduous labors.

TEACHERS' INSTITUTES. Eight Institutes were held, one in each county, with an attendance of 735 members. The added experience and observation of another year tend to confirm the favorable opinion I have heretofore entertained in relation to Teachers' Institutes. If rightly conducted, they are instruments of much good, not only to the teachers in attendance, but also to the communities in which they meet. A recent writer has, very appropriately I think, called them "distributing offices," by means of which the various improvements in teaching and school management are disseminated through all parts of the State.

STATE NORMAL SCHOOL. This institution has continued in a prosperous condition during the past year, and it is believed that each year adds to the conviction that its establishment was the result of a true foresight. During the last winter, the number in attendance was unusually large, being one hundred and eighty.

Many of the graduates of this school are making themselves eminently useful as teachers, and a few are at the head of some of our largest and best graded schools.

During the past year nearly four hundred of the teachers employed within the State have been, for a longer or shorter period, members of the State Normal School, and many of these have given a high degree of satisfaction.

EDUCATIONAL TRACTS. About 1000 copies of an excellent Tract on the consolidation of districts, was printed and circulated gratuitously. Nearly 5000 copies of another Tract, entitled "A Teacher's appeal to the parents of his pupils," have been printed and circulated at a trifling charge.

It was thought that these little messengers, if sent abroad, would find an audience with many who would not, otherwise, give a listening ear or lend a co-operating hand in behalf of the great work in which we are engaged.

Having great confidence in the efficacy of this mode of operating upon the people, I would most respectfully and earnestly urge that a reasonable sum may be appropriated for the purpose of enabling me to avail myself, still more extensively, of this great, but effectual, way of awakening interest and securing right action.

COMMON SCHOOL JOURNAL. The Journal has been regularly published during the past year, and the several numbers have been sent to the acting School Visitors in the various localities, in accordance with provision made by the General Assembly. I am confirmed in the opinion that it is a highly important and useful auxiliary in the educational department. Going, as it does, into every School

Society of the State, it proves a highly valuable medium for the diffusion of intelligence in relation to schools, methods of teaching, &c.

If an appropriation should be made whereby a copy of the Journal could be sent to every School District within the limits of the State, I feel convinced that the result would be so favorable and extensive, as to afford ample assurance that the investment was a judicious one.

EDUCATIONAL LECTURES. The provision whereby the Superintendent is authorized to cause an address, on the subject of Common Schools, in each of the School Societies of the State, is deemed a very important one, and eminently calculated to diffuse correct ideas and to awaken an interest on the part of the people. Whatever efforts shall tend to bring the great and important interests of popular education directly before the minds of the people, and cause them to reflect upon the subject, cannot fail of producing highly beneficial results.

TEACHERS. A good school is the product of the combined and harmonious operation of various agencies. Of these, by far the most important is the teacher, so that the apparently extravagant maxim, "as is the teacher so is the school," is essentially true. The teacher is to the school as the engineer to the engine—the master to the vessel—the commander to the army. School-house, text-books, apparatus, classification, attendance, supervisory officers, may possess every requisite of excellence, and yet, for the want of a suitable teacher, the school may be but a name. No good instruction will be given, no good habits formed, no moral or mental discipline imparted, no desire for knowledge inspired, and all the costly and careful preparation for education, will avail but little in the hands of an incompetent teacher. On the contrary, the accomplished teacher will almost create a good school in the face of every obstacle. Pupils can not come in contact with him without being bettered. His power and skill will turn the very defectiveness of the means employed, into the means of improvement.

COMPENSATION OF TEACHERS. Called to perform duties of the most arduous, responsible and important nature, teachers are entitled to a rate of compensation as great as the same talents and devotion would secure in any other department. I would not be understood as advocating any degree of extravagance on this point, but would simply contend that if the business of training the immortal mind is as important as any other, then the inducements for those who engage in the work should be equal to those held out in any other department of labor.

The average wages of female teachers, is about \$17 per month, from which, if we deduct \$2.50 per week for board, we shall have only \$7 for the poor teacher in return for four weeks of earnest and devoted labor. And, I would ask the candid and intelligent citizens of our State, if this looks like true liberality or true wisdom? Will this small rate of compensation secure a high order of talent? Will it warrant the expenditure of time and money essential for a proper course of preparatory training?

CO-OPERATION WITH TEACHERS. However important and weighty the teacher's duties and responsibilities may be, and however faithfully they may be met, they can never compensate for deficiency on the part of parents and citizens. I have time now only to designate a few particulars in which parents may co-operate with teachers in the great work of education, and thus indicate their appreciation of the true importance of their vocation.

1. By securing the constant and seasonable attendance of pupils.
2. By a reasonable compensation to teachers, cheerfully and promptly rendered.
3. By a seasonable and full supply of the necessary text books, and all necessary apparatus.
4. By encouraging in the pupils habits of diligence and obedience.
5. By cultivating a friendly acquaintance with teachers.
6. By visiting the schools.

SCHOOL-HOUSES. The school-house everywhere stands out as the symbol and exponent of education. It is a visible and palpable index of the popular sentiment on the subject. Where there is not sufficient interest to build a good school-house, it is idle to look in that place for other elements of a good school. If the old house as it was, with all its inconveniences and discomforts, is thought to be good enough, the old price for teachers is good enough, the same old books are good enough, four months schooling a year is enough.

During the year forty-one new school-houses were erected, at an expense of \$120,000. In some of the districts where the spirit of progress has triumphed, and the old structure has given place to the new, a degree of perseverance and energy has been exhibited, rising almost to heroism. In one, fifteen meetings were warned in succession, before the victory was achieved. Scarcely a district can be found

which does not contain some penurious individuals, who will seize upon any pretext to oppose the outlay of a dollar for a school-house. Though the rights of such persons should be respected, they should not be permitted to stand in the way of educational improvement. If the erection of a suitable school-house is to cause opposition, the sooner it comes the sooner peace comes.

LENGTH OF SCHOOL TERM. The law requires the school in each district to be taught for six months in the year. The Superintendent recommends that the minimum be set at eight months.

GRADATION OF SCHOOLS. It facilitates an economical classification. A school is classified as well as it can be, when those scholars who are nearly of the same age and advancement, are assigned to the same class, and are all employed upon the proper studies. In a common district, or mixed school, consisting of fifty scholars, of all ages, as many classes are required as in a school of six times the number,—though in the latter, each class would be six times as large. From twenty to thirty is a proper number for a class, with a good teacher.

Suppose we have six hundred scholars, of all ages, residing within a reasonable distance from a central point, and suppose we erect, for their accommodation, a union school-house, containing twelve rooms, each room capable of accommodating fifty scholars. Now, after an examination, let these six hundred scholars be distributed in these twelve rooms, according to their advancement. Let the fifty in each room be again subdivided into two classes of twenty-five each,—a first class and a second class, according to attainments. Let all in the same class attend to precisely the same branches of study. Let the Principal or Superintendent have the general supervision and control of the whole, and let him have one male assistant or sub-principal, and ten female assistants, one for each room. Or, if it be thought best, let the rooms for the upper departments be large enough for one hundred pupils, with a recitation room attached, for two teachers. The scholars in the lowest room will consist of very small children, just beginning to learn to read and spell. Those in the next room will be a little older and a step higher in their studies,—and so on until in the upper department we shall find young ladies and young gentlemen engaged in the pursuit of studies appropriate to a High School. Those in the same class have, invariably, the same class books, and each department is supplied with a teacher, especially adapted to its grade and studies, and furnished with all the requisite books and apparatus. This is what is meant by a thoroughly graded school, each class being just large enough to enable the teacher to work to advantage, and no one being so large as to be unmanageable. Several schools, answering very nearly to this description, are now to be found in Connecticut.

What are the advantages of such an arrangement over those which could be enjoyed by the scholars, if they were in twelve separate, mixed schools? In the mixed schools of fifty scholars, the number of different recitations and exercises during the day would be about twenty-four. The opening and closing of school, the recesses and necessary interruptions, would consume upwards of an hour, so that the average time left for each recitation would not much exceed ten minutes. In such a school the teacher is obliged to hurry from one exercise to another, with great rapidity, and of course, during the day, perform a great diversity of labor, from teaching the alphabet, to the highest class in algebra.

In the school, graded as I have described, the teacher has but two classes, and not more than six or eight recitations during the day. Consequently, there will be time enough to give to each scholar a thorough drill, without hurry or confusion. In other words, thorough teaching is greatly facilitated. The time of teacher and pupils is all used to the best advantage. While one of the classes is reciting, the other is preparing for recitation—this process alternating all day—the pupils having just time enough for study, and the teacher time enough for instructing each class. The advantages in the discipline and government are no less striking than those of instruction.

In the mixed school, a uniform system of management for the smallest and largest pupils can not be adopted. That kind of discipline which would be well adapted to the smallest children, would not be suitable for the largest. Hence, a much greater amount of labor and skill are required in the government of a mixed school of fifty scholars, than of the same number of scholars in a graded school; and all the teacher's force which is absorbed in government, in just so much subtracted from his available force for instruction.

Another advantage of this system is found in the facility afforded of employing teachers adapted to the different grades. To succeed well in a mixed school, requires a rare combination of qualifications—capacity to teach and interest the youngest, and also the oldest. But it is not so difficult to find teachers who are well adapted to a special department. In a graded school, each teacher has a

small number of different branches to teach, and, consequently, can do those so much the better.

The establishment and liberal support of graded schools, have given great satisfaction, and fully answered the expectations of their advocates, and no community which has given the system a fair trial, with a competent principal and well selected corps of teachers, could be induced to abandon it, and return to the old plan.

MORAL CULTURE. The want of a better moral training in our system of education is already beginning to be felt. It is already to be seen that we have exalted intellectual capacity above moral principles; while virtue ought to be education's paramount object, and ability subordinate. I note it as one of the encouraging signs of the times, that the importance of greater attention to moral training in our schools, is beginning to be agitated with earnestness and effect. A portion, and generally the most eloquent portion of nearly every educational report that reaches us, is devoted to this topic. The light which, for centuries, has been seen on the mountain summits has, at length, approached the valleys.

Milton spoke on the subject almost with the accents of inspiration. These are his words: "The end of learning is to repair the ruin of our first parents, by regaining to know God aright, and out of that knowledge to love him, as we may the nearest by possessing our souls of true virtue, which being united to the heavenly graces of faith make up the highest perfection."

Locke, the great John Locke, has spoken words of wisdom on this subject. "Virtue," says he, "direct virtue is the hard and valuable part to be aimed at in education, and not a forward pertness, or any little arts of shifting; all other considerations and accomplishments should give way and be postponed to this. Learning must be had indeed, but in the second place as subservient to greater qualities. Seek somebody as your son's tutor, that may know how discreetly to form his manners; place him in hands where you may, as much as possible, secure his innocence. Cherish and nurse up the good and gently correct and weed out any bad inclinations and settle him in good habits. This is the main point, and this being provided for, learning may be had into the bargain."

Books, without number, have been composed for cultivating and improving the understanding, but few, in proportion, for cultivating and improving the affections.

But the best treatises will avail little without living teachers, with a hearty, earnest interest in the promotion of virtue, a sincere delight in noble character, a real passion for moral excellence, for generous, patriotic, honorable action, furnishing in their own persons examples of the precepts they enjoin. With such teachers, and with that best of manuals for teaching morality—the Bible—we may hope to see our youth walking in "wisdom's ways," and growing up as true ornaments and blessings to the community.

STATISTICS. Number of Towns,	-	-	-	-	-	158
Number of School Societies,	-	-	-	-	-	222
Number of School Districts,	-	-	-	-	-	1,626
Number of Children between the ages of 4 and 16 years,	-	-	-	-	-	100,830
Average number of Children in each District,	-	-	-	-	-	62
Capital of School Fund,	-	-	-	-	-	2,049,953.00
Revenue of School Fund for 1855-6,	-	-	-	-	-	147,215.00
Dividend per Child over 4 and under 16,	-	-	-	-	-	1.30
Capital of Town Deposit Fund,	-	-	-	-	-	763,661.83
Revenue appropriated to Schools,	-	-	-	-	-	40,000.00
Amount raised by 1 per cent. tax,	-	-	-	-	-	70,129.37
Amount raised by Society tax,	-	-	-	-	-	18,603.00
Amount of Revenue from Local Funds,	-	-	-	-	-	11,327.00
Amount raised by Rate bills,	-	-	-	-	-	81,839.00
Amount appropriated for support of Schools, exclusive of School-houses and repairs,	-	-	-	-	-	314,118.37
Amount expended for School-houses,	-	-	-	-	-	138,267.00
Aggregate amount expended on Common Schools,	-	-	-	-	-	452,380.87
Average wages of Male Teachers, including board,	-	-	-	-	-	28.75
Average wages of Female Teachers, including board,	-	-	-	-	-	17.25

The Reports of Lecturers, and School Visitors, point out the evils and defects in the working of the system, in the indifference of parents, the construction of school-houses, the irregular and non-attendance of children, frequent change of teachers, &c. The Tract, or Letter to Parents, by Mr. Northend, should be sent to the home of every pupil in the land.

To be Continued.

II. AN AMERICAN UNIVERSITY.

BY BENJAMIN APTHORP GOULD, JR.

[AN ORATION delivered before the CONNECTICUT BETA of the PHI BETA KAPPA FRATERNITY, at Trinity College, Hartford, on the 15th of July, 1856.

That portion of this Oration which discusses the subject of an American University, was placed at our disposal by its author, as a contribution to the American Journal of Education, but we have preferred to present the address entire as delivered, as at once more satisfactory to the author and our readers. ED.]

THIS honorable and honored fraternity, dating from the first year of our national existence, aims at uniting the scholars of the nation in one familiar band. It assembles annually in its numerous branches through a widely extended region of the American Union, and communes concerning the intellectual progress and welfare of the republic. The solemn injunctions and pledges to secrecy, which were supposed to strengthen the intimacy of the connection, have now in many of the chapters been disused; but the beautiful organization remains, and who may question its benignant influence. The ambition to be admitted to the brotherhood, the yearly gatherings of its members, the kindly communion of the several branches exert their beneficial power to nerve the young to renewed effort, they keep alive and strengthen in maturer years that affection for letters and intellectual pursuits which softens the manners and smoothes the asperities of active life, gladdening and comforting the professional man and the man of business, and they remove something at least from the barrier of physical distance.

The Phi Beta Kappa Society was established at William and Mary College in Virginia, on the 5th of December, 1776, five months after our declaration of independence. Within four years seven other branches had been chartered, and powers conferred upon some of these for chartering yet others in their several states. The first established chapters out of Virginia were the Alphas, as they are now called, of Massachusetts and Connecticut, charters for these branches having been issued to Mr. Elisha Parmele, on the 4th and 5th December respectively, in the year 1779. But little more than a year later, the original records of

the parent society closed,—the college being then suspended on account of the proximity of the British forces. The following is the last entry in the record book :—

1781, on Saturday the 6th of January, a meeting of the Phi Beta Kappa was called for the purpose of securing the papers of the society during the confusion of the times, and the dissolution which threatens the University. The members who were present were William Short, Daniel C. Brent, Spencer Roane, Peyton Short, and Landon Cabell. They thinking it most advisable that the papers should not be removed, determined to deliver them sealed into the hands of the college steward, to remain with him until the desirable event of the society's resurrection. And this deposit they make in the sure and certain hope that the fraternity will one day rise to life everlasting and glory immortal."

The hope was fulfilled. On the 25th June, 1851, the society was re-organized by Professors Smead and Totten, whom the venerable William Short, one of the original founders, and President at the time of dispersion, had in 1849, shortly before his death and more than sixty-eight years after the suspension of the society at Williamsburg, empowered in due form to revive and re-establish this the parent branch. During this last year the ancient seal has been restored by the Hon. Mr. Stuart, lately secretary of the interior, to whose guardianship it had been transmitted.

Not merely a long-established usage, but intrinsic propriety has rendered one topic in some one of its manifold forms, almost imperative for the occasion, namely, the duties and responsibilities of the American scholar. The orator is summoned as a member of a scholastic fraternity to address an assemblage of scholars. And whatever may be the variations, whatever the changes rung upon this theme, this is and ought to be the leading strain. Though trite, it is ever new and ever worthy of attention, and the succession of the instruments, repeating the same inspiring and ennobling notes serves to enrich and amplify, but not to overload the fugue. Nor is once a year too often for the topic to be formally recalled to our minds and earnestly commended to our hearts.

The flattering invitation to address you here to day found me among the balmy breezes of Louisiana. Written amid the icy blasts of New England, it sped to its destination amid the cypress and myrtle, yet still in our own beloved land,—as much our own

where Canopus sparkles in the winter night, as where the Great Bear trails along the sluggish zenith. Although accepted with hesitation, it has been most gladly complied with. It is indeed dangerous to venture on an untried sea, and all the more for those who know that their appointed path is in another course. Yet the temptation was great; for it was not merely to stand upon this soil, hallowed in the history of American freedom as in that of American letters, but to raise my humble voice in behalf of a cause which appeals to the scholars of our land to rally in its support, and insure its triumph.

"Urania speaks with darkened brow,
Thou pratest here where thou art least,
Thy faith has many a purer priest
And many an abler voice than thou."

But soon follows the response :—

"From art, from nature, from the schools
Let random influences glance,
Like light in many a shattered lance
That breaks about the dappled pools.

The lightest wave of thought shall lisp,
The fancy's tenderest eddy wreath,
The slightest air of song shall breathe,
To make the sullen surface crisp.

There is a beautiful coincidence by which those places consecrated in the annals of our liberties are also classic in the annals of our letters; a coincidence which if fortuitous is more than wonderful. Beneath an overshadowing elm of that leafy city, which it has been my joy to hail by the name of home, the father of his country,—he whose name shall survive though all other modern names should perish,—first drew his blade, as commander of the armies of United America, and thence he led them on, in the name of the great Jehovah, to the achievement of a nation's independence. Here amid the embowering branches of your twin capital of letters and of state, we may yet see the famous oak, which sheltered and preserved the chartered liberties of a commonwealth. The classic walls of Princeton have echoed to the roars of hostile cannon, and reverberated the cheering shouts of Washington as he rallied his exhausted but undaunted band. The mild teachings of

the much-loved sage have for more than half a century filled the halls of Schenectady with youth thronging to gather the words of wisdom amid scenes once ravaged by fire and sword, and where of old were heard the guns from Stillwater and Saratoga. So too with Philadelphia and Williamsburg ; so too with West Point and Annapolis.

Mr. President and Brethren of the Phi Beta Kappa Society, it has been urged that these days in which we are now met together are not times for studious abstraction, for scientific research, for literary retirement,—that there are higher claims on us than those of scholarship,—that even though the pen should not utterly yield to the sword and the toga to the gleam of arms, at least there are other themes for the attention and zeal of the patriot and citizen. No more, we are told, should Peace “pipe on her pastoral hillock a languid note,” but all the powers and all the enthusiasm of those who love their country and their race should be applied to the redress of wrongs and the enforcement of rights.

That there is some reason in this I will not deny ; but it might be asked in return whether it is certain that a bandage might not cure as thoroughly as the amputating-knife, and oil and wine be preferable to the cautery. I believe, Brethren, that there are other places for serving one’s country than the tented field, other deeds as valiant as the storming of a breach, or the scaling of a wall, other sacrifices as noble as that of blood ; that a consecrated life is not one whit inferior in glory to a brave death. And I believe that it is good for us to be here.

“Act well your part, there all the honor lies.” It is as American scholars that I address you, as men who are yearning for a national independence more to be implored than political independence alone,—for an intellectual and moral freedom, in comparison with which mere physical freedom is dust in the balance ; as men who would fain unite in resistance to the bondage of ignorance and prejudice and bigotry and barbarism ; who would gladly witness the inauguration of an epoch when thoughts shall be more than clubs, ideas more than bowie-knives and revolvers ; when if there be an aristocracy, it shall be certified, not by parish registers or bank accounts, but by intellectual attainments, moral purity and noble deeds ; when the applause of good and thoughtful men shall outweigh that of an untutored rabble, and the ambition of our

youth be directed rather to excellence than to position; when the olive chaplet shall be more coveted than the jeweled crown of royalty, the laurel of the blood-stained victor or the fasces of official station. Being such men, it is as such that I address you.

If we would labor for elevating the intellectual tone and aspirations, and faculties and achievements of our fellow-citizens, what time more fit than this? When are such efforts more called for, than when violence threatens to usurp a barbaric sway, when the cherished and fundamental principles of republican institutions are set at defiance, and the very capitol resounds with the clash of weapons? Let me recall to your memories two cheering passages of history.

Among the noblest struggles recorded in the annals of liberty, the revolt of the Netherlands stands pre-eminent. Never was blood more freely offered in ransom for human rights, never was suffering more unflinchingly endured in behalf of liberty, never was self more manfully offered up upon the shrine of patriotism. And the most memorable of all the memorable events of that portentous strife was the siege of Leyden. For nearly an entire year, the endurance of the devoted inhabitants was almost superhuman. As their American historian expresses it, "they had gradually abandoned their hopes of relief, but they spurned the summons to surrender. Leyden was sublime in its despair." "From the ramparts they hurled renewed defiance at the enemy. 'Ye call us rat-eaters and dog-eaters' they cried, 'and it is true. So long then as ye hear dog bark or cat mew within the walls, ye may know that the city holds out. Should God in his wrath doom us to destruction, even then will we maintain ourselves forever against you. When the last hour has come, with our own hands will we set fire to the city, and perish, men, women and children together in the flames, rather than suffer our homes to be polluted, and our liberties to be crushed.'" An over-ruling Providence always protects those who will protect themselves, and despite the taunts of the Spaniards, the ocean did come over the dry land to their relief; its furious torrents swept the ruined dykes away, bearing the fleets of Boisot in triumphant state to the relief of the brave defenders of Leyden, already fearfully thinned by famine, pestilence and sword.

"The Admiral, stepping ashore," says Motley, "was welcomed by the magistracy, and a solemn procession was immediately

formed. Magistrates and citizens, wild Zealanders, emaciated burgher guards, sailors, soldiers, women, and children, nearly every living person within the walls, all repaired without delay to the great church, stout Admiral Boisot leading the way. The starving and heroic city, which had been so firm in its resistance to an earthly king, now bent itself in humble gratitude to the King of kings. After prayers, the whole vast congregation joined in the thanksgiving hymn. Thousands of voices raised the song, but few were able to carry it to its conclusion, for the universal emotion, deepened by the music, became too full for utterance. The hymn was abruptly suspended, while the multitude wept like children."

"On the day following that on which the relief of the city was effected, the wind shifted to the north-east, and again blew a tempest. It was as if the waters, having now done their work, had been rolled back by an omnipotent hand, for in the course of a few days the land was bare again, and the work of reconstructing the dykes commenced."

In commemoration of this memorable struggle, in reward for the sacrifices by the heroic city, and to enable the burghers to recruit their exhausted energies, William of Orange offered them immunity from taxation. Leyden patriotically declined the offer, but, accepting the proffered honor, still more patriotically requested that she might be authorized to establish a university.

Thus in the midst of tumult and bloodshed, in the hour of the country's deepest wo, while storm and clouds hung over the moral and political horizon, was born the glorious University of Leyden, to become a beacon light to the whole world, casting to the farthest limits of civilization its quickening rays. Thus while the Spaniard's artillery yet boomed athwart the exquisitely verdant plains of Holland; while the oppressor's sword still crimsoned that brilliant green with the blood of her sons; long before the widows and orphans of those who fell in that frightful siege had begun to recover from their agony,—on the 3d of February, 1575, Leyden "crowned itself with flowers;" the peals of martial music mingled with the strains of the oboe and the viol, and amid all the pomp of that demonstrative age, with processions, orations and banqueting, the new university was founded,—was dedicated to the glory of a coming nation, and to the service of Him who ordained the laws which were there to be investigated, interpreted and disseminated.

Two hundred and thirty-one years later, on the 4th October, 1806, three hundred and thirty thousand warriors contended in deadly fight for a nation's sovereignty, and when the sun went down on Jena, the dominion and glory of Prussia had set with it. One-half her army had been killed or captured, her cannon swelled the conqueror's train, and Napoleon pressed onward to Berlin. The rally of the defeated armies was but temporary and nominal. Frederick William was driven to the utmost limit of his kingdom, and his alliance with Russia only served to postpone for a few months the arrival of that fatal day when, after the last roseate hue of evening had been blotted out upon the bloody fields of Eylau and Friedland, he signed in tearful despair the treaty by which he surrendered one-half his kingdom, and submitted to a military occupation of the rest by the invading army. Prussia, which within a single century had expanded from a petty province into a mighty realm, no longer existed save in name. Prussia, which his grand-sire had raised to be the equal of Austria and Russia and France and England, was but a conquered province. Even his noble, generous and lovely queen Louisa, had not shrunk from encountering the horrors of war, not even from the most earnest although unavailing personal intercession, to obtain less humiliating terms for her nation, so lately in the front rank of earthly powers. The blow was too hard for her to bear; and, after lingering for a brief period, she sank beneath the weight of her affliction, while yet in the flower of her days, leaving a name enshrined in the hearts of her subjects. Above her grave at Charlottenburg lies her sculptured image, the masterpiece of Rauch, and thither still resort both the Prussian and the stranger, as to a holy shrine, where all the beauty which genius can represent, all the grace of art, the elegance of taste and the splendor of renewed royal affluence can but inadequately represent or commemorate the loveliness of her person and her soul.

It was at this period,—while an exile from his own capital, while the troops of Napoleon still occupied even the region left him east of the Elbe,—that the patriotic monarch registered a vow that he would yet disenthral his whole kingdom from the foreign yoke; that Prussia should yet resume her place among the nations. You know how well he kept that vow. But how was it that he laid the foundations for its fulfillment? He took counsel, not of the war-

riors, not of the clergy, not of the statesmen, but of the scholars of the land, chief among whom were Fichte Wolff Schleiermacher and Wilhelm von Humboldt, a name needing not the added luster even of such a brother's as he could boast. "Exalt Berlin," said they all with one voice, "and you shall exalt Prussia." And he did exalt Berlin. Within eight weeks after King Frederick William III., had affixed his signature to the treaty of Tilsit, he set it also to an edict requiring the preparation of a plan for a great university at Berlin; and ordained that so soon as the last Frenchman should have quitted the city, the professors should assemble in it, and lectures in the university begin. Meanwhile from his distant asylum at Memel or at Königsberg, he had sanctioned the several preliminary steps, and at last under the enlightened superintendence of Wilhelm von Humboldt, who became minister of public instruction, the greatest thinkers and profoundest students were summoned from all the corners of Germany.

Thus was planted the University of Berlin, watered with the tears, sunned with the hopes, nurtured with the aspirations of a people. You know what have been its fruits. Within its walls now gather daily more than two thousand students to catch the words of wisdom which fall from the lips of two hundred teachers. Nowhere since civilization dawned upon the world has such a constellation of brilliant minds illuminated the intellectual firmament, as that which has concentrated in the University of Berlin. I need to name no names,—the world knows them. And even here, standing on this other continent whither the star of empire is taking its westward way, we yet turn our eyes toward those intellectual beams which radiate from where their source has risen in the east. Prussia, God bless her, has reaped her imperishable reward. Though the voices and uplifted swords of her monarch and people availed not to delay the setting of her sun at Jena, they have done more than Joshua did in Gibeon, for they have hurried on its rising to another better, brighter, far more glorious day, and hastened still its upward course unto its culmination in effulgent noon.

These are isolated passages from the history of civilization,—isolated, yet by no means unparalleled. Did time permit, I might cite others like them, or coming to still later years might relate how the first act of the same Frederick William III., on receiving his Rhenish provinces at the Congress of Vienna, was, in the very

proclamation issued from that city announcing the re-establishment of his realm, to promise them a university; and how one of his earliest deeds was to found the institution which has made classic the name of Bonn.

But the lesson is obvious enough. If the political times are sad and the prospect gloomy, so much the more do we need the patriot scholar. If true patriotism seems at an ebb, and the foundation-principles of our republic to be neglected, so much the louder comes the appeal to us to develop the mental resources of a new world. And were the clouds once dissipated and the bright bow of faith again to seal the promises of the past by the pledges of the present, the future still calls on us for action. There can be no reasonable doubt that the future of two continents is in a great measure to be decided by the acts of the generation now growing or grown to man's estate upon the soil of America. Exalt America and you exalt a world. Let her but tread that downward path which begins by fostering the material and physical to the exclusion of the intellectual and moral,—so let the curtain fall, for it were better for you and for me that our eyeballs should be seared, and our tongues palsied, than that we should see the sight or tell the tale.

The purport of my words to day is this. Shall our zone-and-ocean bounded realm, lighted by Southern Cross and Northern Crown, shaded by fir and larch and palm and vine, bearing in its maternal bosom the hopes, not of a hemisphere, but of a world,—whose present is a speck in contrast with its awfully portentous future, but which even now contains a population more than five times that of Holland, more than double that of the Prussian or the Austrian realm, far more than that of all Great Britain; with a richness of resources and a teeming wealth surpassing that of any other empire on this earth,—shall we not take this counsel from the days that are gone and follow this omen for the days that are to come? Shall we Americans never aspire to what suffering Leyden craved, what conquered Prussia looked to for regeneration, and without which all the clustered glories of the Rhine lacked their highest charm? No, we must have it, and have it soon. No more must the long procession of our youth toil through its weary pilgrimage across the Atlantic wave in search of that mental sustenance which it has a right to demand at the hands of its fatherland.

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But it may be asked by some,—What means all this clamor for a university, when we have already one hundred and twenty-seven in the land, and every year is adding to the number?—when the earliest thoughts of our fathers were given to the foundation of colleges in the occidental wilderness, when Harvard followed so close upon the landing at Plymouth, and the settlement of Jamestown was commemorated by the College of William and Mary. The reply is very simple. It is not of colleges that we are speaking, it is of a university. And perhaps it may be advisable to consider for a moment the difference between the meanings of these two words. Or better, if the usage which has grown up in America, and by which the two words are often used as synonyms, be too deeply rooted to permit the distinction to be at present insisted on with advantage, let me define the idea which I desire to convey by the word university, and the institution for which I plead. Names are not things, although some things are but too often names. And the much abused word University has had many a hard burden to bear. In one country it has been made to denote the whole educational organization of the nation,—in a second it is used to designate an aggregation of colleges, whether great or small, similar or diverse in their constitution and aims,—again it has been employed to signify an academic board which confers degrees,—and yet again it is defined as the compound institution arising from the juxtaposition of literary, scientific and professional schools. “In this country also,” I quote the language of President Walker in his sage inaugural address, “the ambiguity has been still further complicated by an accident of history. Our oldest colleges in the beginning were nothing but colleges in the most limited sense of that term, and therefore were so denominated. Some of them, however, when considered in connection with their scientific and professional schools have grown into a resemblance to the German and Scotch universities, but still prefer to retain the old name, while on the other hand colleges of yesterday which can hardly yet aspire to be colleges have chosen to begin by hanging out what I suppose is regarded as the more showy and attractive sign of university.”

By College I understand the high educational seminary which, if not the most exalted for the students of specialities, is yet the highest for the youth who seek that mental discipline, that classic

culture, that literary refinement which must be drawn from the bosom of an *Alma Mater*, and of which we say "*emollit mores nec rinit esse feros.*" I mean that kind of seminary, in the development and equipment of which we Americans have a right to glory as much as in our common schools, and which at present forms the culminating point of our educational system; which transforms a well-taught boy into a cultivated man, and, while in many cases it trains and introduces to the world clergymen, lawyers, physicians, and of late years engineers and chemists, also secures for the community, to the lasting welfare and praise of the State, and honor of the good men to whom its foundation may have been due, a refinement and cultivation among our merchants, bankers, tradesmen, farmers, mechanics, unsurpassed and indeed unequalled in any region of the world and any epoch of history, if we but make the single exception of the Athenian Demos. For, as one of our most elegant scholars and most practical men has truly said, "we take our degrees in the schools, academies and colleges of the country whether we go to them or not. The scholar who speaks to us, the lawyer who pleads for us, the lecturer who discourses at the lyceum, are all our educators." And thus, as Professor Felton went on to show, Shakespeare was educated at second hand by Cambridge, Franklin by Oxford, and the eloquent Clay by those colleges which had stored the minds of Adams, Calhoun, Webster and his other associates and rivals with abundant lore and eloquent culture and exact science.

These are our colleges,—such noble seminaries as Harvard and Yale and Brown, as the Colleges of New Jersey and South-Carolina, the Universities of Virginia and Pennsylvania, such as this *Alma Mater* of good and holy men, who shelters us here within her protecting arms, and blesses this our gathering in the name of religion, and science and letters. This is what I mean by college. Wo to our land if they ever lack protection from the state, the community or the church! They have a lofty mission. To them are confided interests, demanding all their care and all their energies and all their resources.

By "University" on the other hand, I understand the *Universitas Litterarum*, the *Πανεπιστήμιον*,—an institution where all the sciences in the complete and rounded extent of their complex whole are cultivated and taught, where every speciality may find its vota-

ries, and may offer all the facilities required by its neophytes. Its aim is not so much to make scholars as to develop scholarship, not so much to teach the passive learner as to educate investigators, and not merely to educate but to spur on.

It is not solely to diffuse the quickening, life-giving streams of truth, but to fill and keep high the foundation whence all the channels are supplied. It is not so much for preparing the student to be a lawyer or a physician, as for teaching him the fundamental principles of law and medicine and imbuing his whole being with the deep truths which underlie these principles themselves. Not simply to create engineers or surveyors or classical scholars or well-informed men, but to make analysts, naturalists, philologists, searchers after truth and wisdom. To be to the colleges what the normal school is to the high school. To act indirectly with as great a power as that with which its direct action is exerted. To teach men as well as youths. To make manifest its ennobling and elevating action in its reflected influence upon the professors themselves; to be a throbbing intellectual heart, forcing its life-giving streams through every artery to the farthest bounds of the body social and the body politic.

In short, we need a hundred colleges in these United States, while from the very nature of the case it is impossible that for long, long years to come, we should have more than one well-organized University. And, if for the sake of condensation and antithesis I might presume to clothe my meaning in a somewhat paradoxical form, while the usefulness of a College may be measured with considerable propriety by the number and character of its students, that of a University is in the ratio of the number and character of its professors. Should there be one struggling student of the most barbaric tongue or the most recondite speciality of science, he has the same right to ask for a helping hand and intellectual guidance there, as though the bent of his talents led him to the most thickly trodden path, or the least uncommon aspirations. And at a University truly deserving of its name he would find a teacher and helper in the study of any one of the departments of human research, whether in the realm of matter or of mind.

Surely there can be no confusion as to the boundary line between these two distinct institutions. One is designed to answer the demands of the community and of the age; the other to point out

the paths and lead our country on to a higher, nobler, holier, sublimer eminence than it could otherwise attain, or than would otherwise be striven for.

Centralization is a word and an idea now far from popular. But this, like most other principles, has its good as well as evil consequences. And while we, under democratic and republican institutions, feel the full force of the objections to that political centralization under which we see so many nations of the old world tottering and sinking, we are too apt to overlook the incalculable, the unspeakable advantages which flow from the concentrated accumulation of a whole nation's genius and talent.

The enthusiastic Parisian knows so well and feels so deeply what the centralization of intellect has done for his capital, that he forgets, or willingly loses sight, of the unceasing woe to which political centralization has doomed his fatherland. The thought "*La France, c'est Paris*," may well flush the patriotic Frenchman's cheek with the glow of honest pride as he recalls the dazzling brilliancy of the assemblages which crowd the halls of the Institute, or of the faculties of science and letters which disperse to Paris within the circuit of a single league one-fourth of the learning and wisdom of the world. There is no substitute for the "encounter of the wise." Like that of flint and steel it strikes out without cessation the glowing sparks of truth, like that of acid and alkali it forms new, unexpected and priceless combinations, like the multiplication of rods in the fagot, it gives new strength to all while taking it from none. A spiritual stimulus pervades the very atmosphere electrified by the proximity of congregated genius, its unseen but ever active energy,—floating in the air, whispering in the breeze, vibrating in the nerves, thrilling the heart,—prompts to new effort and loftier aspiration, through every avenue which can give access to the soul of man.

Such centralization is eminently distinguished from political centralization, and by this peculiarity among others, that, far from being a combination for the sake of acquiring and exercising a greater collective power, it acts on the contrary to augment individual influence. While forming a nucleus for scientific, literary, artistic energy, it is not a gravitative center toward which every thing must converge and accumulate, but is an organic center whose highest function is to arouse and animate the circulation of thought

and mental effort and profound knowledge. It is a nucleus of vitality rather than a nucleus of aggregation. As the electric battery confers upon every portion of its extended circuit the capacity of communing with all the rest,—as the heart sends out the new-formed blood to quicken every member and then to return for a new freight of life-giving power,—as the brain diffuses its nervous sensibility and its sympathetic faculties to every organ, until the full current of vitality pervades the frame and carries life to the whole organism,—as the great center of our planetary system exhaustlessly disseminates that wondrous force by which the planets and the comets are impelled in their never-ending rounds, sending unceasingly those mystic energies whence they derive all light, heat, motion, force and life, yet asking nothing in return but that these energies may be distributed, adapted and applied,—as the fountain pours out its full invigorating stream, and is again replenished by the dews, the mists, the rains, the clouds, which owe their origin to this very invigoration,—so will a wise concentration of intellect and wisdom promote its own diffusion. An intellectual center for a land is a heart, but subject to no induration; it is a brain, but liable to no paralysis, an electric battery which can not be consumed; it is a sun without eclipse, a fountain that will know no drought. To such a University our colleges would look for succor in their need, for counsel in their doubt, for sympathy in their weal or wo. There is no one of them but would develop to new strength and beauty under its genial emanations, none so highly favored or so great that its resources and powers would not expand, none too lowly to imbibe the vitalizing, animating influences which it would diffuse like perfume.

It were unnecessary to dwell on the peculiar position of the United States in the progress and development of the world's civilization, and on the transcendent interests committed to our keeping for the welfare of centuries to come. Our fathers acknowledged the heavy responsibility which can not but accompany our surpassing privileges. The present age confesses it by that zealous care with which it guards and strives to extend the system of popular education which our fathers founded and transmitted to us.

Patriotic citizens are emulating one another in their zeal to contribute all that is in their power to raise the intellectual and moral tone of the community in which they dwell, and they will be thank-

ful to us if we will guide their liberality. To the least observant it is palpable that the present is in a pre-eminent degree what is called a transition-period, and not only that we can not remain at rest, but that the current of events is sweeping us onward with resistless force, and a rapidity both unequaled in the history of nations and too great to continue long. Fixity, rest, is at best but an abstract idea, without expression either in the material or the moral world. Neither in the heavens nor on the earth nor in the mind of man, neither in the condition nor the language nor the character of nations, is there repose. The very equilibrium both of the physical and of the immaterial creation is an equilibrium of motion, of oscillating counterpoises, of force wrestling with force. But our rushing headway is different from all this; it is something abnormal.

Hardly the screaming steam-horse and the rattling car can typify the speed with which the materials and manners and thoughts and tendencies of our nation are forming, moving and giving place to their successors,—with which our institutions are modifying, our aims shifting. Not merely our system of self-government, but a myriad of other agencies, more numerous than human ingenuity could devise or tongue enumerate, are uniting to swell the breeze which fills the unreefed sails and yet more strongly than the tide still bears us on. But whither? Aye whither! Hopes and fears, auguries of good and omens of ill, confusedly mingled, distract and perplex us. The landmarks are all unknown and we can not tell whether this mighty current, this unceasing and still rising gale are bearing us to some unruffled Pacific sea, or hurrying us on to a relentless Maelstrom. It is the time for action. Thank God that there may still be time to discipline and instruct the crew, and to secure the helm! Men of science and of letters, patriot scholars of America, let me adjure you one and all to lay hands to this mighty work. Think of it, dream of it, talk of it, write of it, agitate it at home and abroad, discuss it in your domestic circles and your places of business, offices, counting-houses, reading-rooms, in your social gatherings and your public meetings. Let the public mind be imbued, permeated, saturated with a sense of the crying need of some great American university, some center of thought and study and research and culture. Do this—and, believe me, it will come. The sooner the better, or we needed it long ago; and we must

have it very soon or not at all. Only put your shoulders to the wheel and we shall have it now.

The attention and efforts of good and wise men have already been earnestly directed to the attainment of this end or at least of some progress in this direction. It was the keen sense of this need which led to the establishment of the scientific schools at Cambridge and New Haven,—institutions which have already been found worthy of imitation in numerous other colleges. It stimulated the eminent scholar, who until recently presided over Brown University, to prepare and urge and carry into effect a complete plan for the re-organization of that college, with the intention of making it a university in fact as well as in name. It prompted enthusiastic hopes in behalf of Columbia College in New York, to struggling endeavors in Philadelphia, to earnest and all but successful effort in Albany, and the foundation of a National University Association, which has already held several meetings in that munificent and public-spirited capital. It has enlisted general interest and stimulated active exertion in the city of New York, where even now some of its advocates are sanguine of ultimate and not remote success. Let us all unite to aid the patriotic and holy cause. The place is a secondary question. Be it California, thither our youth and our wise men shall flock as to a second Mecca, and the Golden Gate be transfigured into a gate of glory. Be it Louisiana, there shall its myrtle and its olive find a new use and a nobler significance. Be it in the far North-west, the matchless fertility of its soil shall be but a feeble type of the new race of its sons. Be it in Virginia, or in our own New England, so shall she forever retain the proud title of Mother of Great Men. Be it in the Empire State, it shall be her noblest, most resplendent crown.

The state that founds the American university, richly deserves to possess it; and I dare not believe that any of us will see the day when there can be a second one. Wherever that university is founded will be the heart of the American republic, and the name of its founder shall go down to distant ages by the side of that of the father of his country.

It has been a favorite plea in excuse of our national shortcomings, to say that we are as yet very young, not yet expanded to the vigor and strength of the old world. Vain, shallow pretext! Foolish sophistry! We are in the fullest vigor of a yet unwasted

strength, the richest people upon the earth, glorying in our energy, our power of endurance, and our feats of arms. It is time that we had begun to glory in our moral worth, our mental vigor, our intellectual progress, and the support, championship and furtherance of other ideas than physical strength and laden coffers. And the signs are not unpropitious. Indeed we may already glory that the whole republic has been found ready to respond to the appeals of an Agassiz,—that even the packet-ships of the land have hastened to offer the welcome of their hospitality to European scientists who desire to attend the annual gathering of our American Scientific Association. Heaven be praised that we may already glory in the possession of high-minded men whose public spirit and liberal munificence have become proverbial wherever patriotism is honored and generosity applauded! Heaven be praised that we may claim as our fellow-citizens the Coopers, Astors, Dudleys and Lawrences! Our thoughtful and gifted Lieber has given their deeds a fitting name. "To call such gifts princely, or even imperial, liberality," he says, "were simply using a sinking figure of speech. Princes never bestow such gifts of that which is their own. May we not call it '*American republican munificence?*' No Adrian disburses this sum from a treasury filled with the tribute of achieving provinces; no Napoleon lavishes it from the collection of severe taxes; no Guy bequeaths it to soothe the smarting memory of disreputable traffic; no testator distributes what he could not take with him; but a simple citizen and kindly lover of his species gives what he has earned by active and by honest trade, in the full vigor of a life that has always been garnished with deeds of charity and public spirit. An act like this is an event and belongs to history, otherwise it might be indelicate to state that the mentioned sum is not the tithe, but the third or fourth part of the wealth which the generous donor's own industry has accumulated with the blessing of Providence."

To a nation which has raised up such men as these, it is impossible that our appeal should be made in vain. These public-spirited men too have a right to expect of us some indication as to what and where are our most crying intellectual wants; and even did they not expect it, we have a right to urge our appeals and volunteer counsel in the name of that fatherland for whose present progress we would plead, and in behalf of whose eternal destiny we would implore.

But it is scarcely to be anticipated that so large a sum as would be demanded for the foundation of a University upon a scale worthy of this people and commensurate with the demands of the age can be derived from private generosity, even though several individuals of exceeding wealth should unite in the exercise of American republican munificence. The yearly outlay would far exceed the whole endowment of an ordinary college. For such sums as these it has always been necessary to appeal to a state or nation. There are great disadvantages connected with such a course here, it is true, the most prominent of these, under our form of government, being the danger of intermeddling by unskilled and incautious legislators. Yet it seems far from impossible to guard against this peril, great as it is,—and to arrange a judicious system of checks and balances, by which the evils of hasty and impulsive legislation may be averted, without impairing the capabilities for progressive expansion and adaptation. It were certainly vain to imagine that any handiwork of human skill can spring into being, like Pallas, in the full maturity of perfection. No organism was ever manufactured. It must grow. The element of time must enter into its development. As a garment fresh from the artisan must gradually adapt itself to the form which it is to clothe, so must every national institution grow into its conformity and harmony with the manners, the tone, the tendency of the people. And thus the danger of a dependence upon the body politic appears manifestly far less to be apprehended than the opposite peril of an unrenewed governing board, permanent and filling its own vacancies. For however decided may be the advantages which spring from unity of counsel, however trustworthy and enlightened may be the individual members personally, still the principle of power without immediate responsibility is too much at variance with the whole tenor of American republicanism, to escape distrust and animadversion, more harmful than even divided counsels or a fluctuating policy. It were manifestly out of place to enter here upon illustrations of my meaning. They will occur to you all. Perhaps there is no principle of social philosophy more generally conceded by our statesmen and scholars, than that which warns against an institutional oligarchy, not open to influences from without, severed from dependence upon the community which surrounds it and in behalf of whose interests it is to act. The era of such organizations was

that of prospective and exclusive monopolies, and of territorial entails. They are characteristic of a by-gone age, though of an age whose consequences may still be found here and there in the form of chartered prerogatives and traditional abuses. That these are altogether without power for good no one can doubt,—and it were easy to exemplify this also by citing exceptional cases, close at hand, in which a very small oligarchy is endowed with large privileges, most conscientiously exerted. Yet here it is the peculiarity and conspicuousness of the exception which illustrates the existence of the rule. Upon this topic there is room for large discourse; but it belongs to the detailed rather than to the general consideration of our subject, and I pass on with a single remark.

More than one carefully organized educational institute has failed of full success in our land in consequence of a grievous and eminently injurious theoretical error on the part of its founder; an error, too, not unnatural for those, all whose experience and views of life are taken from the so-called practical, that is the empirical side. If an institution, they say, be in conformity with the wants of the age and of the people, it will, when once established and fairly launched into the stream of action, prove self sustaining and be capable of constantly replenishing its own resources. A failure to do this would, they maintain, furnish all the demonstration requisite for showing that the institution, in that form at least, was not needed. A grievous, an injurious error, did I say? There are in this assumption *two* fearful, deadly mistakes,—practical errors as well as philosophical fallacies. Is there one of our colleges that is self-sustaining? Shall we apply the doctrines of trade and barter to human souls? Are we to reason about mind and thought and culture and research, as we do about bales of cotton and chests of indigo? No, that is indeed a dire mistake. And a yet greater one is the pernicious idea that the design of a school or an athenæum or a library or a college or a university is to keep pace with the times and with the public mind,—in short, that it should follow rather than lead. To adopt such a doctrine were to debar ourselves from progress. What! education dragged dangling at the heels of the age, struggling to keep up with the march of civilization? What! the teacher leaving his proud vocation, to throw out bait for pupils who may bring a few more dollars to the treasury, or a few more human beings to the lecture-room? No. We want no

university keeping up with the times and commending itself to the public approval. We want one which shall be just as far ahead of the age as is consistent with being within hail,—which shall enlarge and expand the mind and taste and appreciation of the public, compelling the admiration of that public, not soliciting its approval. We want a university which instead of complying with the demands of the age, shall create, develop, and satisfy new and unheard-of requisitions and aspirations,—which so far from adapting itself to the community shall mould that community unto itself, and which through every change and every progress shall still be far in advance of the body social, guiding it, leading it, urging it, drawing it, pulling it, hauling it onward. An institution not needed if it is not self-sustaining! Have the greatest men of ages past been sustained by the community,—the Homers, Keplers, Miltons? Brethren, is the sun needed in the heavens? or shall we deny this also, because it is not sustained by the planets which it illumines and vivifies?

There is, however, one sense in which a university ought to be self-sustaining. As the sun, though not upheld by its planets, is still an essential member of the Kosmos, and is itself bound by the same laws as they, although primary to a more exalted system, so must a university be self-sustaining, not materially or pecuniarily in a direct temporal sense, but mentally and morally. It must command the veneration and devotion of the nation, creating in the republic a reverence for truths, and principles, and learning, and science, and research; an intimate acquaintance with the laws which regulate the universe, and whose detection reveals to us the counsels of the great First Thought and the eternal decrees by which He manifests himself,—decrees recorded in the answer to every question that may be devised by the fertile thought of the being molded in the image of his Maker. Commanding this respect, enlisting this homage, receiving this fealty, it will and must be self-sustaining like every other university that ever existed.

University. It is a word in the history of man, like Church, State, School. It is at the same time one of the great phenomena and one of the great levers of civilization. Under some form or other it dates back to the very dawn of letters, art, culture, refinement. It has existed, without a chartered name or tangible organization, wherever wise and thoughtful men of diverse attainments

have been numerous assembled, raising the tone of thought in a state and acting on each other, as on society at large.

Ancient Greece, the parent of our modern civilization, may boast the first University. For, however incomplete and immature, it was an infant university,—that concourse of gifted men which crowned immortal Athens with her undying glory, when half a century after the foundation of the first recorded library, the lofty aspirations of Pericles and his countrymen found expression in those transcendent works of art, which confirmed, even while illustrating, the refinement and genius of the state, and have secured throughout succeeding ages to a city numbering scarcely more than a hundred thousand inhabitants, and only twenty thousand voters, the titles of nurse of arts, fountain of science, center of culture, home of philosophy and studious thought. The intellect of a world thronged her streets, the unrivaled grandeur of her Acropolis but typified the elegance of the popular taste, while in its crowning monument,

" Earth proudly hails the Parthenon
As the best gem upon her zone."

A gem too, not dedicated to the protecting power of Zeus, not to the loveliness of Aphrodite, not to the valor of Ares, not to the all-embracing dominion of Poseidon. No, it was another divinity than these who received the highest tribute of "Cecropias pillared state," who gave its olive and its name; and the full treasury of the triumphant republic poured out its wealth in unstinted profusion to rear the proud temple and the colossal statue to Pallas Athene.

" Athens, the eye of Greece, mother of arts
And eloquence, native to famous wits
Or hospitable, in her sweet recess,
City or suburban, studious walks and shades ;
See there the olive grove of Academe,
Plato's retirement, where the Attic bird
Trills her thick warbled notes the summer long ;
There flowery hill Hymettus, with the sound
Of bees' industrious murmur, oft invites
To studious musing ; there Ilissus rolls
His whispering stream ; within the wall then view
The schools of ancient sages."

This was a magnificent university ; and here began that long

line of great men which, under the exalting influence of Athenian culture, gave the world a list of names yet equaled by no realm, or age, or race. The shady groves and grassy lawns were consecrated by the teachings of great men to whom we even now refer for instruction and ennobling thought; the theater of Dionysos beat to the rhythm of Æschylus and Sophocles, Euripides and Aristophanes. Here were the wise statesmen; here the impassioned, silver-tongued, and all-persuading orators; here were the fathers both of physical and ethical science; and here the authors and artists who gave language and molded taste and style for coming ages and nations. In Athens and Athens only in all history, could have been uttered that proudest of boasts, that loftiest of panegyrics:—

“Τοσοῦτον δ' ἀπολέλοιπεν ἡ πόλις ἡμῶν περὶ τὸ φρονεῖν καὶ λέγειν τοὺς ἄλλους ἀνθρώπους, ὥστ' οἱ ταῖτις μισθιαὶ τῶν ἄλλων διδάσκαλοι γέγονασι, καὶ τὸ τῶν Ἑλλήνων ὄνομα πεποίηκε μηκέτι τοῦ γένους ἀλλὰ τῆς διανοίας δοκεῖν εἶναι, καὶ μᾶλλον Ἕλληνας καλεῖσθαι τοὺς τῆς παιδείας τῆς ἡμετέρας, ἢ τοὺς τῆς κοινῆς φύσεως μετέχοντας.”

“So much indeed has our own city surpassed all the rest of mankind in thought and language, that those who here are pupils are teachers elsewhere, and that she has made the name of Grecians seem no more to denote the race alone, but the intellectual attainments, and those to be called Grecians who partake of our culture, rather than those who share our common nature.”

Even three centuries later, Athens was still a Universal school, and frequented as such by the youth of Rome, in her palmiest days, for the improvement of their minds and education of their taste. There Cicero and Virgil, Horace and Lucretius studied, and thence they brought that grace and learning and thought with which they adorned their native tongue.

So, too, were Alexandria and Pergamos, so were Tarsus and Berytus, partial universities, by virtue of their libraries and of the learned men whom these libraries attracted,—universities and direct offshoots from the Athenian stem. But the legitimate successor of Athens was Constantinople, which in the fourth century of our era became the center of art and letters. Science hardly existed at the time, and what little there was had found a temporary refuge among the Egyptians and Arabians. But art and letters fled to the Byzantine capital, lingering there so long as it could afford a

shelter, and leaving indeed their traces even down to the present day in the Greek schools which still continue under the protection of the Patriarch of Constantinople.

The atrocities of the Crusaders,—those foes of culture and learning more ruthless than the Saracens, more unsparing than the Ottomans, more desolating than the Huns or Vandals,—combined with the barbarism of all the rest to destroy the monuments of ancient art and the masterpieces both of the earlier and later classics. An exodus of scholars from Constantinople, which had commenced before the sack and pillage by Mohammed II., was rendered complete by that fearful catastrophe. The word university, in its signification of place of instruction in universal learning, had already come into us. Like an exploding rocket sprinkling on every side its spray of golden sparks, so did Byzantium in its destruction send out its scholars to scatter the seeds of Hellenic science and culture in directions the most diverse. These were the men who originated and established the universities of Italy and France and Spain, and the precursors of the universities of Germany. Platonic academies were founded, in places the most remote, by fugitive Greeks, who introduced into European learning the element of criticism, an element unknown in Asian science. This rekindling of letters by the renewed study of Grecian literature was the harbinger of a new era, and the dissemination of such scholarship as had remained in Constantinople led to a rich and copious harvest. It was this regeneration of intellectual activity that rolled back the dark curtain of ignorance, superstition and barbarism which has given a name to those ages, and it prepared the way for that form and measure of civilization which we now enjoy,—a civilization founded upon popular education under the immediate guidance, direct or indirect, of institutions of higher learning.

The discovery of the Pandects doubtless aided the progress of this revival of letters, by the stimulus which it gave to the study of the law; for an incentive to advancement in any one department of research is always an impulse to all the rest. The universities of Bologna and Cordova, of Lyons and Paris, had already been founded, as also had the monastic institutions which formed the germ of the present seminaries of Cambridge and Oxford. These were now followed by universities at Naples, Padua, Vienna, Pisa,

Perugia, Valladolid, and elsewhere ; but especially by the Platonic Academy of Florence, which became the focus of culture, taste and thought, constituting in fact a splendid university which led the way for many of the weightiest discoveries of modern science, and still secures to beautiful Florence her pre-eminence as the home of art. For letters and research, science and art, may not be divorced by the hand of man. Speech, thought, emotion, are connected by indissoluble ties.

I will not attempt to follow up the history of universities. Suffice it to repeat that where the great and gifted are gathered together in numbers, there is the germ of a university,—competent even as a germ to enlighten and to spiritualize, no matter whether it publish programmes and confer degrees, or not. In the brilliant days of Louis XIV., the Parisian University was not merely within the walls of the College Louis le Grand, or of the Sorbonne. Its spirit was in every public gathering, it pervaded the air, it radiated even from the dissolute court, and amid the profligacy of those degenerate days it held up the ægis of mental culture, shielding from many a moral taint and sheltering the state from wounds which would otherwise have hurried it to a Babylonian fall. And I assert that wherever and whenever in history we find a state or a city conspicuous for an ennobling influence upon its age race or nation, we shall find this influence to emanate directly or indirectly from a university.

I had designed devoting some little time to an account of the Italian, Spanish and early French universities, tracing the gradual modifications of their respective organizations, and finally entering upon some account and discussion of the great universities of modern Germany. But this would demand a disproportionate share of your time, and more than I should be warranted in consuming ; and since the questions which they would suggest pertain chiefly to matters of detail rather than to general principles, I will not hesitate to pass them by.

Cambridge and Oxford too, the chief universities of England, have exercised an eminent influence upon the national character, although their benefits have probably been due rather to the circumstance, that these two cities have formed the nucleus around which has crystallized the whole scholastic culture of the realm, than to any especial excellence or completeness in the constitution

of the seminaries. For both of these institutions, although now known by the name of universities, were originally a simple aggregation of monasteries, founded for religious more than educational purposes. At present all these monasteries have become colleges; but, in spite of their enormous wealth and of the abundant learning which has clustered and still congregates around their venerable and honored walls, their cultural development has not been of that wide range which characterizes a university proper, but has been restricted chiefly to exegetical philology, theology and ethics, with the addition at Cambridge of the mathematics. So striking has been the want of symmetry in the growth of their range of study, that even now, the word "scholarship" is there employed to denote solely proficiency in philological attainments, or rather a knowledge of a limited number of the Greek and Latin classics, to the exclusion of all the exact and natural sciences; while "natural philosophy" is still used, as it formerly was with ourselves, to designate all the departments of physics combined.

Let us now recall the memory of some of these universities,—reverend and hallowed in the history of the mental progress of our race,—and let us admit to our hearts the associations with which their names come freighted.

Let us think of Bologna, Cordova, Padua, Salamanca; of Heilberg, Prague, Pavia, Sienna and Coimbra; of Cambridge, Oxford, Würzburg, Leipsic, Basel; of Wittenberg, Seville, Königsberg, Jena, Pisa, Leyden, Bamberg; of Halle, Göttingen, Upsala, Munich, Berlin. Let us recall these and others like them, and then inquire whether all this fair series is now to be at an end, because the physical energies of the world have begun to traverse the Atlantic gulf. Shall all the classic names be trans-Atlantic, and no American soil be sacred in the annals of mental progress? Shall there be no new Athens upon this wide-spread continent, where science and art, ancient lore and modern inquiry, may gather together and be blessed under the protection of a nation's wings or folded to a nation's heart? Shall our American youth still be driven to make their weary pilgrimage across the sea, even as the children of luxurious, effeminate, ignorant Rome were wont to seek the groves of crumbling Athens, there to gather the remnants of that mental food which Hellas had given to her children, but Rome refused to her own. Brethren, if you omit the university

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from the scheme of the commonwealth, you will cripple civilization, you will mar the noblest development of humanity. And yet how stands the case with us at present. Although we have our twenty-seven millions of souls, although we have everywhere our common schools, though we have established our high-schools, and founded our colleges,—yet when the earnest youth, whose lips you have moistened with a few drops of the quickening draught, rushes to seek the full tide of learning, asking to drink from the fountain-head, and bathe his soul in the refreshing current, you show him the flood-gates closed. He hears only the distant murmuring of the wasted stream which ever torments and never may slake his thirst, and whose rippling voice is more torturing than is the sparkling nectar at the lip of Tantalus.

I claim that the same arguments, which demand of a state that it educate its children, require in like manner and with equal force that all be furnished with full opportunity for developing their intellectual powers, and that abundant provision be made for the special education of those whose general education has been already provided for. And if it be a high duty to supply colleges which shall help to change the well-trained boy into the cultivated man, how can it fail to be a duty also to enable the cultivated man to become the scholar, the investigator, the teacher, the helper, the ennobler of his race and country?

But there is a far higher ground than mere precedent, on which the university must be advocated and established. Did history furnish no examples for our study, admiration and emulation, still the call on us to establish a university would hardly be less imperative than now. That men are born with faculties for progress, with inward promptings to investigation accompanied by the capacity to conduct it, is a sufficient indication that the Creator and Supreme Disposer meant these powers to be cultivated. And the experience of all humanity teaches, that His providence is so exerted as to reward intellectual triumphs by temporal blessings, conferred if not upon the individual at least upon the race. We know that strong taste, impulses and capacities for searching out the secrets of nature, developing the beauties of art, discovering the laws of existence and of thought, are sparsely and diversely conferred. And since without the support and aid of society these lofty impulses can not be gratified, the conclusion is inevitable that it is a duty of the state to promote the culture of special mental powers as

well as the education of general capacity, and thus to insure for the benefit of the commonwealth the maximum spiritual activity of its citizens. I will not attempt to follow, expand or illustrate the argument. To you its pursuit, expansion, illustration, are in no wise necessary. Indeed an excuse is needed for the allusion to what is so self-evident and palpable. Would that the apology were not at hand! But till our own America may boast a university where all her sons, whatever their peculiar bent or taste, may find an opportunity to gain new light and larger knowledge, we must dwell on this, were it the tritest of themes, and lay stress on it, were it the most elementary of axioms. Let us hope and trust that before the revolving year shall again have called you together to celebrate this festival, no man may be able to deny that America provides food for her children.

The mode of organization is a secondary question, no matter how great may be its intrinsic importance. There are those who strenuously advocate the German plan and would retain all the little peculiarities of detail, riveted on by history, and which none would so gladly discard as the Germans themselves. There are those who advocate an ideal structure, planned with skill and reared with judgment, to overtop and eclipse all its predecessors. Nor are those wanting who in the zeal of their scholastic sympathies would summon again the ancient usages of Bologna, or the constitution under which Salamanca won her classic name. All these are questions of detail, and their answer is at present unimportant in comparison with the great problem before us, which is to found a university somewhere and somehow. I will not enter into particulars, but may be permitted to express my abiding faith that, with the blessing of Providence, neither the strict discipline of Oxford, nor the unfettered freedom of Padua, nor the profound abstraction of Salerno,—neither the predominance of the exact sciences which appears at one, nor the overweight of antiquated and mouldy speculation manifested at another, nor the preponderating influence of manner over matter, form over substance, as at a third,—is to be feared. Spread out before us is the history of a hundred nations, whence we may learn merits, dangers, safeguards, and cull the beauties and the sweets. A wise exercise of this privilege is earnestly to be desired; still under any system there will be a living force, a vital, shaping energy, which will soon mold everything to such conformation with the other institutions, the manners,

the habits of the age, as is needed for establishing the mutual relations through which all the blessings are to flow. In other lands and times this adaptation has been the work of a "historic development." But in our land it will follow in like manner in immeasurably shorter time, from the increased vigor of all the influences which act upon the body social and politic; and, chief of all, from the great fact that it concerns no privileged class, but the whole people, among which and for which and by which it is to exist.

No matter what the initial form, how great the advantages or the harm,—these are but for a couple of decades of years at the farthest. The university will contain a soul, a restless, striving, throbbing, impelling, shaping, creative vitality; and will become, not an Italian, nor a French, nor an English, nor a Spanish, nor a German, but pre-eminently an American university,—glowing with American fire, pulsating with American aspirations, and, strange as the words may sound to us to-day, radiating with what will then be American scholarship, American depth of thought, American thoroughness of research, American loftiness of generalization. For so surely as effect follows cause will all these follow in the train. It will bring the refining power of ancient lore and classic elegance to balance and counteract the all-pervading tendency to mere material science; it will leaven the tone of thought throughout the world, by introducing the precision of exact science where the vagueness and confusion of the schoolmen has long reigned; it will lift the philosophical and philological sciences to a far higher scope and standard as specialities, while it unfetters the struggling mind from the incubus of an antiquity which recognizes no progress, a conservatism which excludes all things which are or ever have been new. It will liberalize classic education, and yet be an unsparing foe to stagnation. For I assure you that there never existed a university which surrendered either to conservatism or to radicalism. Never an university which was not eminently nationalizing in its tendency; never one where influence was not toward a more thorough understanding of things foreign. Under the most absolute despotisms, the universities have been nurseries of political liberty; under the most intolerant of creeds, they have fostered freedom of thought. In the midst of license they have preserved the public morals, and in all times and places they have kept down that evil of our own days so well described as "intellectual anarchy."

Scarcely had the new-born second Greece escaped from Moham-

medan thralldom and cast aside the tokens of her subjugation, when she hastened to confirm her independence, not simply by political organization and all the circumstance of legislation and of embassies, but by founding her university,—a university before there were any pupils. A score of years has not yet elapsed, but there are pupils now, who, attending the instruction which the state vouchsafes to all without price, are creating a Hellenic nationality. And now, in Athens,—where but yesterday exploded the Turkish shell and boomed the hostile cannon whose lingering echoes have yet scarcely died away from the reverberating marble cliffs of Parnes, Pentelicus, and Hymettus,—more than forty native professors are discoursing to nearly seven hundred native students, children of the foreign merchant, the Turkish slave, of the Kleplitic robber.

This is the youngest of the race, the last of that long series which began where it has ended, where now,—beside the murmurs of Ilissus and Cephissus, amid the fragrant gales which breathe from Hymettus and Cithæron, within those very grotes where Plato walked, close to those glory-crested heights which have resounded to the accents of Demosthenes and Pericles, yes, within the very shadow of the Parthenon,—has arisen again the temple of Learning and the offerings are again heaped upon her new-built shrine. The European cycle is complete. Let us pray that the American cycle may begin.

Mr. President and Brethren, my task is done. The opportunity which your kindness has vouchsafed me, to commend to your hearts the furtherance of the great work, was a privilege not to be slighted. Let us strive with all our powers, until that work shall have been accomplished, feeling that every effort, which by one jot or tittle advances the noble consummation, gives us a title to the gratitude of ages yet unborn, and to the consciousness that we too may be recorded *de patria bene meriti*. Found the American university, and throngs of European youth shall crowd its halls, carrying back with them American ideas to ennoble their own lands, bringing hither with them counterpoises of trans-Atlantic thought that shall ennoble ours, and both by their coming and their going, cementing the family of nations in bonds of mutual sympathy and attachment. Found it, though it cost the whole revenues of a capital. Let earth, air and sea bring their tribute; let California and India pour in their gold, and the busy marts of men their gains, till this great work is done. Thus shall we achieve the glory of a nation, the welfare of a continent, the advancement of a race, and crown the clustering hopes of humanity with more than full fruition.

THE POLYMERIZATION OF VINYL MONOMERS

BY R. H. HARRIS

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W. Colburn

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keeper till their deaths. After a short residence at High Rock, the family moved, in 1800 or 1, to Milford. The grandparents were exceedingly fond of Warren, and he was affectionate and obedient to them. At the age of four, he was sent to a Summer District School, and had care and charge of his sister, about two years old. The father was a farmer, and the son was early put to do a boy's work on the farm. At Milford, he began to attend the Winter District Schools while they kept. He was esteemed a good and truthful boy, and was never addicted to profane or foul language. His grandmother died suddenly at Milford, about the year 1802. His grandfather lived about three years after, and died in 1805, at the age of ninety-one years, when Warren was about twelve. From Milford, the family moved, about the year 1806, to Uxbridge. Here, as before, his occupation was on the farm, and his education chiefly what was afforded in the winter terms of the Common Schools, wherein his taste and expertness in arithmetic was manifest. This talent was discovered and encouraged by his father. Mr. Gideon Alby, a poor and infirm man, good at figures and used to teaching, was taken into the family for the purpose of giving Warren instruction in cyphering during the fall and winter evenings. He was already aspiring to a more extensive scope for enterprise than the farm presented. In about 1810, the family, on his account, moved to Pawtucket, R. I, where he was put to labor and learn something of machinery with Mr. John Fields, a machinist. There they lived about a year, and moved thence to Canton, 1812. They resided in the vicinity of the factory, where he found employment on machinery, and others of the children in connection with the factory. He remained at his occupation when the family moved to a farm near the line of Dedham, toward Walpole, and, not long after, to Webb's Factory, in the border of Walpole. In about 1813, during the war with England, and while he was in Canton, he learned to weave of Capt. Williams, a Norwegian, whose wife was an English lady. He went to Plymouth, in about 1814, where he wrought in machinery, which, being in the war time, was then rather a profitable as well as a rapidly extending business. From Plymouth he went to Easton, in the early part of 1815, still working in the same line of engagement at the factory in that place, and continued there some months after the declaration of peace. In the summer of this year, and, at the age of twenty-two and a half years, he began to fit for college. The Rev. Dr. Richmond, for about a quarter of a century the settled minister of Stoughton, discharged also from time to time the office of teacher, and fitted pupils for college. Under his tuition young Colburn placed himself. A fellow-pupil was

Henry G. Wheaton, son of Daniel Wheaton, Esq., of Norton, a gentleman of wealth and of education. The two pupils were soon friends, and the friend of the son was readily befriended by the father, who kindly arranged with Colburn to lend him such sums of money as he might have occasion to borrow for defraying his college expenses. It is said to have stimulated the son to the completion of his preparatory studies, so that the two might enter together, and be room-mates in college. Says Mr. Wheaton: "We lived together in the same room for about five years; at Mr. Richmond's, fitting for college, about one year, and four years in college; the most of the time engaged substantially in the same studies. Of course, being class-mates and occupying the same room, we were intimately acquainted, and met many times after leaving college, particularly while he was in Boston."

His college life, at this late period, will be best portrayed by such recollections of his class-mates as can now be gathered. Soon after his decease, there appeared an anonymous newspaper article attributed to Dr. Edward G. Davis, who was, at the time it was written, a practising physician in Boston, of respectable connections and standing, and who died in Philadelphia in less than six years afterwards, and before completing his thirty-seventh year. If any slight discrepancies or repetitions are discovered in the different sketches, the portraiture, as a whole, will not, it is hoped, be considered the less valuable. The following is the article of Dr. Davis.

REMINISCENCES OF A CLASS-MATE.

Mr. Warren Colburn, whose death was recently announced in the papers, passed the years 1817 [1816] to 20 at Harvard College. It was there that he developed that fondness for the higher branches of mathematical studies, and that talent for analysis, which continued so remarkable in his after life. It is the impression of the writer that he entered college only with the usual preparatory knowledge in this branch; but, while there, he made himself master of the calculus, and read through a considerable part of the great work of Laplace. He commenced his collegiate course at the comparatively late age of 24, when both his mind and his character had reached a degree of maturity much exceeding that of the great proportion of his fellow-students. It was only by slow degrees, however, that his talents and his virtues made their due impression on the minds of those around him. With a sensitiveness almost allied to timidity, he shrunk from familiarity even with those with whom he most constantly held intercourse, and there are many who can remember, when the jest and the laugh went round, how little Colburn partook in the boisterous merriment. There was in him a peculiar diffidence about obtruding himself or his thoughts upon others; a disposition to stand back, and, only when strongly urged, to join in the scheme which formed the attraction of the moment. Yet, was he possessed of great, nay, of peculiar kindness of feeling; no angry word ever escaped his lips, no expression that breathed of aught but benevolence and good will. A little circumstance, but one which is no doubt familiar to the recollection of all who knew him at the time, and which seems intimately interwoven with the general texture of his character, was a hesitation in speaking, slight indeed, but sufficient to make it an effort to him to express himself, and to call up an evident embarrassment when he attempted it. Many years after, when the writer again saw him, this hesitation of manner

appeared to be unaltered. It was no doubt one of the causes which rendered him shy of engaging in general conversation, nor did he, in conversing, always do justice to the vigor and force of his own thoughts. To this diffidence and slowness of manner was it owing that a just estimate of his powers was formed by only a very small proportion of his early friends. It was, indeed, known that he pursued his mathematical investigations with great ardor and zeal; and, his acquaintance with these subjects were, in some degree, made evident in his recitations. But, the accuracy with which his exercises in the languages were prepared, and the foundation he was laying in the science of philology, were suspected only by a few of the more discerning members of his class. Yet, it was a fact, that he studied languages with no less thoroughness than the abstract sciences; and, the involved and difficult passages in Aristotle were analyzed by him with neither less care nor less success than the propositions of Newton and the formulas of Laplace. This circumstance was little known at the time, but may readily be believed by those who have noticed with what success his mind has recently been directed into similar investigations, resulting in the production of an elementary work on grammar; a subject to which it would hardly have been anticipated that a mind like his would have directed its energies.

His great and most interesting project, that of improving the system of elementary instruction in mathematical science, appears to have occurred to him during the latter part of his college life, and was the subject of painful thought, many years before his first work made its appearance. It required, indeed, no small energy of mind thus to break through the trammels of early education, and strike out a new path; for, Colburn, like others, had been brought up under a system the reverse of that which he now undertook to mature and introduce. This is not the occasion, nor is it the writer's purpose to attempt a criticism on the system itself. The author may have followed out a single principle more closely, and applied it more extensively, than the interests of education required. But, such was the readiness with which it was adopted, that, in the course of a few years, the appearance of these little books seemed to have revolutionized the mode of teaching elementary mathematics in the schools of New England. Various modifications have since been introduced into his plan, for which, whether improvements or otherwise, little credit can be claimed on the score of originality; and, it may with safety be asserted that, whatever in the present mode of teaching the science of numbers in our schools distinguishes it, from that in use twenty years since, is mainly to be attributed to his publications.

In the constitution of Mr. Colburn's mind, many circumstances were peculiar. His mental operations were not rapid, and it was only by great patience and long-continued thought that he achieved his objects. This peculiarity, which was joined with an uncommon power of abstraction, he possessed in common with some of the most gifted minds which the world has produced. Newton, himself, said that it was only by patient reflection that he had arrived at his great results, and not by sudden or rapid flights. In Colburn this slowness and patience of investigation were leading traits. It was not his habit, perhaps not within his power, to arrive at rapid conclusions on any subject. If this tended, as probably it did, to impart to his conversation that hesitating manner which I have mentioned; if it made him appear more absent and thoughtful than quite befitting the animation of social intercourse, it yet had its advantages. His conclusions, reached slowly and painfully, were established on a solid basis, and the silent progress of time, that great test of truth, has served but to verify and confirm them.

Such, imperfectly stated, are the writer's college recollections of Mr. Colburn. He has little to add to them, derived from a knowledge of his subsequent career. He soon passed into a station in life which he was well qualified to fill, and the duties of which he conscientiously and ably performed. More extensive intercourse with the world served, no doubt, to divest him of some prejudices, and to improve his qualifications for social life; but, in seeing him occasionally during the last thirteen years, the writer found the exquisite simplicity of his manner still retained, and his habits of thought appeared to have experienced very little alteration. From the same mild, gentle eye beamed the same benevolence of expression, and the friend and associate of former days stood again confessed. Alas! that the recollection of the past can never more be refreshed by another meeting, that the form which is portrayed so vividly in the fancy of surviving friends, has passed from earth, and will be no more among men. But, while the present

generation remains, will that form be cherished in grateful hearts; and, even when all who knew his worth shall have departed, his name will be preserved, in connection with works, at once the evidence of the energy of his mind and of the benevolence which directed its application. He has performed a good work on earth, which shall not be taken from him, even when his remains, now slumbering beneath it, shall have crumbled to dust. Though dead, he will yet speak to those for whose instruction he zealously labored, while living; and, so long as education asserts its claims to respect among us, the name of Colburn shall be numbered among a people's benefactors.

The Rev. Benjamin Kent, of Roxbury, writes, June, 1856:—

Being older than those who entered college with us, and of nearly the same age, we soon became intimate associates. In our Junior year, we had a "part" together,—the translation of a Greek dialogue into English. I can, mentally, see the room, and the bland and loving countenance he wore when we were engaged together in our work: and, during our whole college life, whatever may be true of others, I never heard an expression of any feeling toward him than that of admiration for his dispositions, counsels, and intellectual gifts. It may, indeed, be said that he brought with him to college a decided taste for mathematics. We none of us ever thought of approaching near to him in this science. He early studied and made himself perfectly familiar with the French language, with a distinct view to mastering every French mathematician of promise which he had not met with or seen referred to. In saying this, however, I do not mean to say that he did not excel in every other department of a college education. He always ranked among the first scholars of his class in every thing but public speaking. "Oratory!" he used to say, with a soul-prompted smile and brilliancy of eye, "I am no orator, as Brutus is;" and we all lamented that his vast erudition, for so young a man, could not be freely communicated to a promiscuous audience, or sometimes even in the recitation room, in consequence of his modesty and a slight impediment in utterance. To sum up what I learned in the course of intimacy and friendship, which was never for a moment interrupted, I need only say, what I do say with the deepest sincerity, that he never gave evidence of carelessness in a recitation room, of unkindness to any one who applied to him for sympathy or counsel, or of envy, jealousy, or self-assurance, when a few others were selected to appear before audiences in higher parts than those assigned to him. Taking our studies altogether, I am confident that he had not his superior if his equal, as a scholar, gentleman, and Christian, in the class of which we were members.

The Rev. E. B. Hall, D. D., of Providence, May, 1856, writes:—

I have no memorial of him except those of the mind and the heart; but, they are very precious. His image and whole character stand before me as entire, definite, and life-like as those of any early friend, departed or living. Some of my associates in college have passed almost wholly from my memory; but, Colburn is as if I had seen him yesterday, or were at this moment listening to his slow utterance, but pleasant voice, and clear thoughts, in the recitation room, or the private interview. Though not peculiarly intimate, he being much my senior, and wholly unknown to me previously, I knew him enough, and was with him enough, to form the highest opinion of his character as a man of stern integrity, transparent simplicity, freedom from all guile or pretence, and invincible moral courage. I doubt if any force could have driven,—I am sure no lure could have enticed him into a single mean action or false word. There was no one in my whole college acquaintance to whom I should have gone more readily for counsel in any emergency, or to whose care I would more willingly have committed any trust.

Colburn was not a splendid scholar, nor able to do full justice, either in speech or with the pen, to his own clear perceptions and actual knowledge. This was owing to a natural diffidence, small power of expression, and, as I suppose a want of early advantages. But, in clearness of thought, soundness of judgment, the habit of discrimination, and, above all, mathematical genius, he was surpassed by few. His position in the class was always respectable, and, in the end, high. He had as little ordinary ambition as any mortal could have. He loved study for its own sake, not for appearance or immediate effect. He was faithful to every duty, and, by a uniformly consistent deportment, and quiet, straightforward course, won

the confidence of all his teachers, and the respect of all his fellow pupils; while some were bound to him as by fraternal affection.

After our college life, I visited him once or twice in Lowell, and saw manifest tokens of ripened character and advancing intellect. He seemed to me to give promise of great usefulness, if not of high distinction. His death affected me as a personal as well as a public loss. A good impression of his features hangs in my study, but a better one in my heart. I should be sorry to believe that I shall never meet him again.

Mr. Sparks, ex-President of Harvard College, says, 1856 : —

He was a student in college during about a year and a half while I was a tutor. I left Cambridge in the early part of his Junior year, and I do not remember to have seen him afterwards. All my recollections of him, as a student, in regard to his character, deportment, and scholarship, are of the most favorable kind. He held a high rank in his class, particularly in the mathematical department, in which I was an instructor. I was not then aware of his peculiar and remarkable gifts in that branch of science which he subsequently manifested.

The Rev. Dr. Gannett, under date of January, 1856, writes : —

Mr. Colburn was older than most of his class-mates, and did not form intimacies with many of them. Indeed, his only very intimate friend, as I suppose, was James G. Carter, afterwards of Lancaster, who died some years since. Carter and he, after "commons," would go off together for long walks, talking, as the rest of us believed, on metaphysical and mathematical subjects, in the former of which Carter, and, in the latter, Colburn was most interested. We all respected Colburn. He was, far and far away, our first mathematical scholar, and respectable in all branches. His moral character was stainless, and, it was taken for granted that he would do right; for, we looked on him as a man, rather than as one of us lads. He was always kind in disposition, and agreeable in manners; so far, at least, as my impression of him is just; but, he did not associate very much with his class-mates, and was regarded as an honorable, studious, and exemplary person, rather than as one with whom we could be very free. He used his time faithfully, and left college, I believe, without any occurrence to mar the pleasure he must have had in recalling his course through the four years.

Dr. Palmer, of Boston, Jan , 15, 1856, writes : —

Colburn's parents being in humble life and not blessed with this world's goods, (although they were highly respected by their neighbors,) he was dependent on his own exertions for a subsistence. He was brought up to the business of a machinist, at which he labored for some years. I know not what induced him to quit his business and determine to obtain a liberal education. He was fitted for college by the Rev. Edward Richmond, D. D., of Stoughton. But, in all the studies required for admission into college, with the exception of mathematics, he was illy prepared; for, he told me himself that he was only one year in fitting; having begun to study the Latin Grammar on Commencement Day, the year before he entered. The consequence was that, in classical studies, while in college, he never shone; but, in mathematics, he was, *longo intervallo*, ahead of all his class-mates.

The Rev. Dr. Furness, of Philadelphia, was also of the same class, and writes, Jan. 20, 1856 : —

I remember him as, by a number of years, the senior of the majority of our class. He was respected by all. Every class-mate of his will bear witness to his many character, and to his devotion to his favorite study.

He lived, in his senior year, I think it was, in Stoughton Hall, on the west side, not far from the college bell. I recollect his chum's telling us, one day, that he missed Colburn at morning prayers, then at six o'clock; he missed him at recitation, likewise, about half an hour after, and he missed him also at breakfast, at half-past seven. He did not know what had become of him, and supposed he had gone upon an early walk, and wandered too far to return in time for breakfast. However, his chum, upon returning to his room after breakfast, opened the door

of Colburn's study, and found him standing there at his desk, lost in mathematical studies. The bell had rung out its summons three several times, but, as he said, he had not heard it. We all believed it was exactly so. He was too unpretending and simple to affect any thing.

Again, I recollect being in Prof. Farrar's recitation room. After recitation, when the first scholar of our class stopped to point out a mistake in our text-book, Prof. Farrar agreed with him that it was an error. Colburn, who happened to overhear them, (he was the only other person, beside myself, in the room.) struck in and observed that there was no mistake. I remember I knew not which most to admire, the superior acuteness of Colburn, or the candor and interest with which, without any false pride, the Professor listened to his pupil. Of his great mathematical talent who does not know.

He took his first collegiate degree with his class at the commencement, in August, 1820. In the public exercises of the occasion, his appointment was ranked an honorable one. His "part" was "On the benefit accruing to an individual from a knowledge of the Physical Sciences," which he creditably sustained. The subject was assigned to him by the Faculty; but, probably selected with some view to its adaptation to his taste and turn of thought. The following passages are given as illustrative of his habitual thoughts and purpose.

The purpose of education is to render a man happy as an individual, and agreeable, useful, and respectable, as a member of society. To do this, he ought to cultivate all the powers of his mind, and endeavor to acquire a general knowledge of every department of literature and science, and a general acquaintance with the world by habits of conversation. And, this is not inconsistent with the most intense application to a favorite pursuit.

The Physical Sciences belong to all the professions; and, not only to them, but to all men, in every situation. There is not a human being, who has not something to do with these sciences. They are the science of life. Every child, as soon as he begins to learn any thing, begins to learn the rudiments of them. But, it is the rudiments only that he learns, the abstruse principles are to be discovered by patient and diligent study.

It is true, indeed, that a very large portion of the community have neither time nor opportunity to acquire them, by their own exertions; and yet, the greatest advantage might be derived from these sciences, in the hands of this class of citizens, because they possess the means of applying them more immediately to useful purposes. The knowledge of these sciences, therefore, is to be circulated by the favored few who have the means of knowing them; and, it becomes the duty of every one who possesses the means, not only to acquire them himself, and to do what he can to improve them, but to promote the diffusion of them among mankind, and to be always ready to give any information in his power concerning them to all who may need it.

The bent of his mind is here to be plainly seen. Education was the subject to which he was chiefly inclined, and teaching was his favorite pursuit. On leaving the university, he undertook the work of teaching, and kept a select school in Boston. He already had the experience of them who, working their way through a course of college education, resort to school keeping in the winter. He had taught in Boston, in Leominster, in Canton, and, thus early practiced, he soon became an accomplished teacher. His lecture on this subject, delivered before the American Institute of Instruction, in 1830, presents a

luminous view of his own mind and experience, and is well worth the attention of teachers.

The number of his pupils in Boston was not large at first; and did not, at any time, exceed from about twenty-five to thirty. His friend, Mr. Carter, in a letter of 1821, writes: "I congratulate you on your success in your school. From what I hear, as well from other sources as from yourself, I apprehend that you have a pretty strong hold on the good opinion of the respectable part of the community. There are few of us so well qualified, both by nature and education, as you are for this important station in society. My prayer is that you go on and prosper; and, take that elevated rank in society which your talents, your acquirements, and your virtues so eminently qualify you to maintain."

It was while engaged in keeping this school that he produced his "First Lessons in Intellectual Arithmetic." He must have begun to make the book about the time that he commenced the school. Perhaps the work was previously conceived. It was probably put to press in the autumn of 1821. His friend, Mr. Carter, Nov. 9, speaks of it as forthcoming, and, Dec. 15, as having been received by him at Lancaster.

Mr. Batchelder, of Cambridge, states: "I remember once, in conversing with him with respect to his Arithmetic, he remarked that the pupils who were under his tuition made his arithmetic for him: that he had only to give attention to the questions they asked, and the proper answers and explanations to be given, in order to anticipate the doubts and difficulties that would arise in the minds of other pupils; and, the removal of those doubts and difficulties in the simplest manner, was the foundation of that system of instruction which his school-books were the means of introducing." His "First Lessons" was, unquestionably, the result of his own teaching. He made the book because he needed it, and because such a book was needed in the community. He had read Pestalozzi, probably, while in college. That which suited his taste, that which he deemed practicable and important, he imbibed and made his own. He has been sometimes represented as owing his fame to Pestalozzi. That in reading the account and writings of the Swiss philosopher, he derived aid and confidence in his own investigations of the general principles of education, is true. But, his indebtedness to Pestalozzi is believed to have been misunderstood and overrated.

Upon the first appearance of the "First Lessons," his friend, Mr. Carter, of Lancaster, writes, Dec. 1821: "I shall see Dr. Thayer this afternoon, and, if I succeed to my mind with him, your book will be

immediately introduced into the academy here. I shall send my copy to-day to Rev. Mr. Clarke, of Princeton, who is quite engaged in the instruction of youth. I hope he will use his influence to introduce it in his parish. I think you will do well to send a quantity of them to the book-store in this town, for sale. I need not tell you that I am more and more pleased with your book, the more I see of it. I intend all my scholars shall use it, for I am convinced they have got the substance of it to learn, however far they may be advanced." On April 12th, 1822, Mr. Carter writes: "Your little book is still doing well. The bookseller told me, a day or two since, that he had sold a great many to go out of town. You must get out another edition as soon as possible, for I think they will be very useful in the summer schools. Let me know how you progress with your larger arithmetic, and how you get on with your algebra. I feel much interested in the latter. But, I have little doubt but you will do the subject justice."

Thus the "First Lessons" worked its way gradually to notice and favor,—a book which has enjoyed a more enviable success than any other school-book ever published in this country, and the merits of which are now universally acknowledged to be equal to its success. It has been said to be "the only faultless school-book that we have." It certainly has wrought a great change in the manner of teaching arithmetic. Its system is received wherever the book is known. It has no competitors, except in the profits of sale, in the shape of imitations; and, that these have been numerous is altogether to its credit. Such a man as George B. Emerson, after twelve years' constant use of it, long ago pronounced it the most valuable school-book that has made its appearance in this country. And, Thomas Sherwin, Esq., of the Boston High School, calls it, not only the best in this country, but, the best in the world. Its use is believed to be nearly commensurate with that of the English language, and it has been translated into other tongues. It has been stated that fifty thousand copies of Colburn's First Lessons are annually used in Great Britain; and, its sale in this country is about one hundred thousand per annum. About two millions of copies have been sold since its first publication in this country.

It will be seen that the Sequel and the Algebra were parts of his original conception, in connection with the First Lessons, and were in a state of progress as early as 1822.

He continued his school about two years and a half; and, though his teaching must be pronounced successful, as well by the testimony of his pupils as by that of his book, the production of that period; yet, owing to his retiring modesty and reluctance to putting himself

forward, his financial success was but moderate. And, though teaching was his favorite science, and an engagement of which he was fond, yet, says one who had opportunity to know: "I do not think he ever intended, even if he had had the greatest success, to make teaching his ultimate employment. I think that he always had a predilection for the pursuit which he afterwards followed; and, felt that, from his early practical knowledge, added to his scientific, he was well fitted for the occupation." Visiting in the families of his pupils, he was introduced to the late Patrick T. Jackson, who, with his quick perception of the qualifications and abilities of men, soon discovered in his new acquaintance the talents and acquirements adapted to a situation which he was then seeking to fill. Mr. Jackson offered him the situation of Superintendent of the Boston Manufacturing Company, at Waltham, with a much better income than he was deriving from his school. He accepted the place without much hesitation, and went to Waltham, April, 1823.

Here he was successful in his business, was much esteemed, and made some very valuable friends. Among these, now living, is Dr. Hobbs, who still cherishes impressions of him "as a man of great simplicity of character, honest and upright in all his ways, with a moral character without spot or blemish; a liberal supporter and promoter of science and the arts, always kind to children and poor scholars that were trying to get an education, always friendly to all institutions of morality, religion, and learning, his heart full of benevolence, and his mind ever active to promote the education and well being of the rising generation."

During his college course, he kept school on two occasions in Canton, Mass. In the winter of 1818, he had for a pupil Miss T. C. Horton, at that time residing there with her mother. An affectionate and reciprocal attachment was then commenced, which, after an acquaintance of about five years, resulted in their marriage on the 28th of August, 1823, about four months after his settlement in Waltham. The connection was a happy one, and marked with a very warm and tender affection, to the freshness and fervency of which there seemed to be no abatement. As well in health as in his last and only sickness, it was the same; and, to the very close of life, it was seen to gush forth from the fullness of his heart, so long as he had the power to give it expression.

On the 18th of June, 1824, the Superintendent of the Lowell Merrimack Manufacturing Company, Mr. Ezra Worthen, died instantly, while engaged in his ordinary duties. Mr. Colburn was appointed his successor, and removed his residence to Lowell as soon as he could be

conveniently transferred from his duties in Waltham. His removal was in August, that of his family in October.

He seemed to be well aware of the responsibility of his new position, as well in a more general as in a business point of view. In his general relations to the interests of the community, he was active and enterprising. He readily perceived and appreciated the peculiar character of a manufacturing community in New England, and projected at once a scheme of lecturing, adapted to popular improvement. His plan was to present common and useful subjects in such a way as to gain attention, and in such connection with science as to enlighten and furnish the popular mind. He proposed to occupy the space between the college halls and the common schools by carrying, so far as might be found practicable, the design of the Rumford Lectures of Harvard, into the community of the actual operators of common life.

Early in the autumn of 1825, and so along through the winter, he lectured upon the Natural History of animals. With an excellent magic lantern he illustrated the classification of animals, exhibiting on the screen specimens of the several classes, of the size and color of life, and pointing out, while the animal was thus before the company, its qualities, and the characteristic distinctions of its class. He lectured upon light; intermingling with statements of some of its remarkable facts, explanations and simple illustrations of some of its familiar phenomena. In a dark room, with his well-managed instrument, he exhibited the rays, applied lenses and explained their effect, illustrated the refraction of rays by refracting them to the sight. Some curious optical illusions were exhibited and explained. The structure of the eye; the use of lenses, the telescope, the microscope, were made intelligible to uneducated operatives by his successful experiments and simple teaching. He lectured upon the seasons; and, by diagrams thrown upon the screen, and a very simple orrery, of his own construction, and a skillful adjustment of lights, he illustrated the changes of the year; and, with his plain and lucid explanations, brought the subject to the comprehension of every observer. He took up the subject of electricity, and, with the help of a machine, taught and illustrated many things, which it is of practical use to know. The phenomena of thunder and lightning were presented to the comprehension and understanding of many who, without a thorough knowledge of the science, even as then developed, gathered enough to give interest to the storm, to allay unreasonable terror, and to suggest the ways of safety.

These lectures were given in the years 1825, '26 and '27. They

were commenced, at least, from two to three years, as is believed, before the subject of Lyceums, so-called, and of Lyceum Lecturing was broached in New England. The Middlesex County Lyceum, which was among the early associations of this kind, and of which Mr. Colburn was chosen one of the Curators, was formed November 16th, 1829. He had attended a meeting of gentlemen of the county, for maturing the plan, and contributed, from his own experience, important aid to the enterprise.

In the winter of 1826, what had been called East Chelmsford was incorporated into the town of Lowell; and, at the first town-meeting, held March 6th, Mr. Colburn was chosen one of the Superintending School Committee. It was of vast consequence to make a good beginning of the public schools of the town. The duties of the Committee, by the Statutes of the Commonwealth, and under existing circumstances, were arduous and responsible. The acting members were fully aware of their position, its difficulties, and its importance, and determined to discharge the office faithfully and to the best of their ability for the interests of the schools. Though laden with other cares, they spared not the labor nor the time. When the pressure of other engagements was upon them, they repeatedly held their meetings at six o'clock in the morning. Mr. Colburn served on this Committee the first two years, and contributed freely of his wisdom and pains to the favorable beginning and good condition of the schools. In town-meetings he took upon himself to look after the appropriation of money to the schools. He was customarily on the Committee for dividing the money to the several districts; and, frequently on other Committees pertaining to the interests of the schools. In 1831, he was elected again on the General Superintending Committee, and was, at his own request, excused from serving.

While he was at Waltham, though withdrawn chiefly from the work of practical education, the subject continued to be his favorite study, and heavily taxed his leisure moments. He soon finished his second book, the "Sequel," which came out about the beginning of the year 1824, which is certainly a work of great ingenuity, which shows a great mastery of the principles of education, and which he himself considered a book of more merit and importance than the First Lessons. Of the Sequel, indeed, it may be said, not only that its true value has not, in general, been sufficiently estimated, but, that its actual influence on the use, the understanding, and popularity of the First Lessons has been appreciated only by particular observers. Whoever considers by what sort of management school-books are thrust into and out of the market, and how natural it was for book-

makers and book-publishers to feel that Colburn had received his share of profits, will easily see that the Sequel had a severer ordeal to pass through than the First Lessons, and much greater difficulty in holding the place to which, by its merits, it might be entitled.

After seven or eight years of successful experiment in the use of the First Lessons and Sequel, attempts were made in Boston, by imitations and variations, to supersede them, so that his friends applied to him to make some modification of one or both of the books, so as to obviate the objections which had been devised. Early in 1833, he directed his attention to a revision of the Sequel. He perceived that the objections most relied upon were based upon misapprehensions or misrepresentations of the distinctive characteristics of the book. He did not wish to make it an easier book, nor an essentially different book. That which he was laboring in his mind, was to make its distinct character more readily apprehended, without injuring it; contemplating also other slight amendments, in passing. That part of the labor which such a mind may work out, before putting pen to paper, except in scraps and hints, intelligible only to himself, he had already accomplished. His mind had penetrated to the result, with pretty good hope of being satisfied therewith,—had his life been spared to attain it. That the event was otherwise is much to be regretted by the friends of education.

Says Mr. Thomas Sherwin, Principal of the High School, Boston: "I regard Mr. Colburn as the great benefactor of his age, with respect to the proper development of the mathematical powers. Pestalozzi, indeed, first conceived the plan; but, Mr. Colburn realized the plan, popularized it, and rendered it capable of being applied by the humblest mediocrity. Indeed, I regard the First Lessons as the ne plus ultra of primary arithmetics. The Sequel is also a very good work; but, it needs a pretty intelligent teacher to make it eminently useful. In his Algebra, Mr. Colburn accomplished much, by rendering the study interesting, and by gradually leading the student to a knowledge of pure algebraical symbols and processes. Mr. Colburn did much to place algebra within the reach of the mass of learners. He introduced an original demonstration of the Binomial Theorem, which is a very good instance of the inductive method of reasoning. He commences with forming several powers of a binomial by multiplication. He then examines the law of the letters, also the co-efficients, and finds that the latter consist of several series of numbers, deducible the one from the other. The next step is to trace out the law of the different orders of series, show how to find any term, and the sum of any number of terms, in each series, and demonstrate the mode by

which one series, or any term of it, may be deduced from the preceding order of series. Finally, the laws thus obtained are applied to finding the co-efficients of any power of a binomial, and the usual rule for finding the successive terms is given. This investigation of series, tracing out the laws which characterize them, and the application of those laws to the Binomial Theorem, is entirely original with Mr. Colburn, and exhibits that acuteness of investigation, and that analytic character of mind for which he was distinguished."

He completed his Algebra in 1828, and, as himself remarked, he never in his life worked harder, and never accomplished more, from day to day, than he did then; when, in addition to the sedulous and faithful discharge of the duties of his place, as the Company's Superintendent, and other numerous incidental calls on his time, he was writing that work, and carrying it through the press.

It was not in one department only, but in teaching generally, that he sought and looked for the best methods. In his relation to the public schools, as one of the Superintending Committee, his attention was directed to the subjects of Reading, Grammar, and other branches. He published a series of selections from Miss Edgeworth's stories in a suitable form for reading exercises for the younger classes; in the use of which, the teachers were carefully instructed. He prefixed to each book of the series some instructions in Grammar. So that a system of Grammar for younger pupils was completed in connection with the Reading Books. These instructions were addressed to the teachers, that they, possessing their own minds with the beautiful simplicity of the system, might communicate the same, in its plainness and clearness, to their pupils. Thus, a very good notion of English Grammar was given to children, and their early proficiency therein, by this method, was scarcely less admirable than in arithmetic.

In the winter of 1828, his lectures, which, from the beginning, had been entirely free and gratuitous, were given in connection with the Middlesex Mechanic Association. He lectured upon Hydraulics, constructed an apparatus of considerable extent, exhibited several kinds of water-wheels, explained the power of water and its application as a motive agent, showed the principles of the Hydraulic Press, and gave numerous illustrations of the flow and the force of this element. He was invited to lecture in Boston on the same subject, and did so before the Mechanic's Charitable Association. He was heard by many intelligent gentlemen, who were curious to observe the practicability of presenting subjects of science to the popular mind. Although research and knowledge of his subject were satisfactorily evinced, yet, the presence of such a proportion of scientific gentlemen,

probably, somewhat disconcerted him; and, the failure of some of his experiments made him feel less at home than with a more popular audience.

His lectures, in the subsequent years, at Lowell, were many of them on the subject of Astronomy. Eclipses were lectured upon, as they occurred; and Comets, as they appeared. Says a gentleman of science: "I visited him once or twice, while he was at Lowell, and, on one occasion, assisted him in taking an observation of the sun, with his Reflecting Circle, for the purpose of taking the latitude."

In May, 1827, he was elected a fellow of the American Academy of Arts and Sciences. He was, for several years, a member of the Examining Committee for Mathematics, at Harvard College.

It was the early policy of the Manufacturing Companies to select, for Superintendents, men practically acquainted with their business. A very different policy has subsequently prevailed, that of appointing men of character and standing, perhaps of some general experience in business, but without practical knowledge of mechanics or manufacturing, and, consequently, dependent on the Overseers, whom they superintend, for such information in those departments as they have occasion for. In the one case, the Superintendent looks at the work, understands its quality, observes the Overseers, gives such instructions as are needful, and, if anything goes wrong, he is capable of knowing how and by whom it is to be corrected. In the other case, he calls together his Overseers, takes their several opinions, and makes up his mind thereupon. This is flattering to the Overseers, and may sometimes be turned to their advantage. The theory counts upon a gain by securing their influence with that of the Superintendent, in the community at large, favorable to the corporations. The arrangement may be more satisfactory to a portion of the operatives; but, whether more advantageous to the Proprietors, is by no means certain. It is like putting in the Supercargo to be master of the vessel, making him dependent on his subordinate officers for its navigation. It may do, in fair weather and plain sailing; but, it is doubtful whether the voyage be quicker made, with more economy or advantage to the owners.

Mr. Colburn was a practical mechanic, and not ignorant of manufacturing. To this he added a thorough course of classical and scientific education. With a view to all of these qualifications, he was chosen to his place. The last named may have been the occasion of a particle of jealousy. It was said, when he died, by one who had opportunity to know: "Few who have occasion to employ so many persons, possess their good-will and affection so extensively as he did."

This was true. He was much beloved by all in his employ, and most by them that had most frequent occasions of intercourse with him. His Overseers were strongly attached to him, and thought when he died that his place could not be filled. Had it been thought necessary to provide a man, in whom practical skill and science were combined in equal degree, as in Mr. Colburn, it would not have been easy. But, the same gentlemen Overseers, under the change of policy referred to, finding themselves in a very different relation to the Superintendent, and in a more agreeable and more advantageous position, it was natural that they should approve and even prefer the new state of things. And, equally natural was it that Mr. Colburn's very extraordinary qualifications for the situation which he filled, should have been less spoken of and less appreciated in the community at large. Had he lived, it cannot be doubted that his abilities and acquirements would have found no inconsiderable scope in his sphere as Superintendent. But, brief as his time was, his services were of signal advantage to the manufacturing interest. Several improvements of machinery in the spinning and weaving departments, which have proved to be of important and permanent utility, were introduced by him. In this position, he did not disappoint any reasonable expectation.

"The most of my intercourse with him," says Samuel Batchelder, Esq., now of Cambridge, but then sustaining a like position with Mr. Colburn, in the Hamilton Works, "was confined to the management of the manufacturing business, in which he was engaged during his residence at Lowell. His mathematical skill, and his knowledge of the principles of mechanics, gave him important advantages for the situation in which he was placed, and he was not less successful in his good judgment in the general management of business." Such, on this point, is the statement of one, than whom, probably no person living better knows, or is more reliable.

Previous to his removal to Lowell, it does not appear that his attention had been much directed to religious investigations; and, he was known to have had a decided distaste for religious controversy. The chief and absorbing religious discussion of his time, in Massachusetts, was that between the two extreme portions of the Congregationalists, the Trinitarian and the Unitarian, or, as they were called, the orthodox and the liberal. His tendencies were to the latter. When he began to study, and became in love of learning, his religious theory was, probably, little else than natural philosophy. In his Dissertation, at Commencement, he says, of the physical sciences: "No class of studies has done more to dispel the sombre clouds of superstition

which so long overshadowed the human intellect, and kept it groping in the darkness of ignorance and error; a darkness which sheltered fairies, witches, and thousands of malignant spirits, which afflicted and oppressed mankind; a darkness, in which the stars directed the destinies of men, and ruled them with resistless sway; a darkness, in which the Supreme Ruler of the Universe appeared only in his terrors, delighting in the miseries of his creatures, selfish and sordid in his views, capable of being appeased by vain ceremonies, and even with a price. The light which has beamed upon the world through the influence of philosophy has broken the spell by which they held the human intellect enslaved."

At the time of his removing to Lowell, there was but one congregation in the place, and that worshipping in the Episcopal form; and, to this most of the community then resorted. In the position which he occupied, the whole population of the village came more or less directly within the sphere of his influence. In these circumstances he perceived himself invested with a religious responsibility of serious extent and importance. He felt that the weight of his character and position must go into one scale or the other,—either for or against the religious interests of the people; that it was impossible for him to wield an influence that would be neutral in this regard; and, his ingenuous and comprehensive mind was at once made up as to the course which he consistently pursued. With the general reputation of the Episcopal church he was not unacquainted, with the Prayer Book he soon made himself familiar. In the discussions of his time, much use was made of the mysteries objected against the Trinitarian system, and he had himself felt the force of this popular argument. But, looking into the subject with his accustomed penetration, he soon perceived, and readily acknowledged, that no system of Theology, nor even of Philosophy, is free from mystery; and, that, in this respect, neither hypothesis had any advantage. And, in view of the authority of a Divine Inspiration, he determined to make the Bible the end of controversy, and to receive its revelations and its mysteries on the testimony of the sacred word.

Never having been baptized, his mind was exercised with characteristic ingenuousness and simplicity upon preparation for that solemn sacrament. After a very serious consideration, on Whit Sunday, June 3, 1827, he was baptized, in St. Anne's Church, publicly confessing his faith in Christ. He soon afterwards received the Lord's Supper, and was confirmed on the first subsequent opportunity. From that time he was a constant communicant, as he had been, and continued

to be a constant worshipper; never having been known to leave his chosen place of worship for the sake of attending on any other. He filled the office of Church Warden as assiduously as if he had no other engagement; and, in the absence of the Rector, repeatedly conducted the worship as a lay reader. His Christian character partook of the leading features of his mind. His religious affections were not subject to great excitements, for his mental operations were habitually slow and deliberate. They were strong, however, and deep, for his mind was strong and profound. Genuine simplicity is always amiable: when united with a vigorous and cultivated intellect, it is truly lovely; when found in connection with knowledge of the world and intercourse with men, it is as admirable as it is rare. Simplicity, under all these circumstances, was a marked and beautiful feature of his mind, and it pervaded his religion. His heart was open to religious influences, and his feelings were direct and truthful. They were not showy, for he was naturally reserved, even in departments wherein he excelled. His religious character was not wavering, because, having exercised his strong understanding in the simplicity of his heart, he acted conscientiously and consistently. His religion inclined to the cheerful, because the temperament of his mind was habitually so. The kindness of his natural disposition became benevolence in his religion, and induced him, in his quiet and unobtrusive way, "to set forward the salvation of all men" within his sphere of influence.

His cheerfulness in the social circle,—how he loved and enjoyed his select neighbors and friends in the familiar intercourse of evening recreations and readings at his own house, at theirs, will be remembered afresh by the yet living, who participated therein.

It was observed by his intimate friends that the labors and cares of 1833 were not sustained with quite his usual degree of physical vigor and elasticity. He was advised to take some relaxation, which he could scarcely be said to have done during his residence in Lowell. The summer was an inconvenient time for him to be absent, and he did not get away until the beginning of August. He then took a journey to New York and Philadelphia. But, his strength did not recruit. As he returned, on his way home, he was cold at times, and, when he alighted at his door, in the chill of the evening, from the stage which had brought him from Boston, August 23d, he went directly to his chamber, which he never left again. A fever, insidious and fatal, had seized upon him, and having run through a course of anxious fears, and trembling hopes, and assiduous attention, on the thirteenth of September, terminated his valuable life.

The next day there appeared, in a Lowell paper, of which the editor was Mr. J. Sleeper, afterwards of Boston, the following obituary:—

In this town, last evening, Warren Colburn, Esq., Superintendent of the Merrimack Manufacturing Company, aged 40 years.

Mr. Colburn graduated at Harvard, in 1820, and scrupulously fulfilled, through life, all the duties incumbent on him as a *man* and as a *CHRISTIAN*; and, his death will be severely felt, not only by his family, but by a numerous circle, to whom he was endeared by the ties of friendship and affection. It may be truly said of him that his mind was, intellectually and morally, of the *highest grade*. His labors to advance the cause of education are well-known to the world; and, his admirable treatises on Arithmetic and Algebra are acknowledged as standard works, and are introduced into almost all our schools and academies. Many important improvements in the machinery of our manufacturing establishments are the fruits of his scientific researches and ingenuity. Indeed, he was always devising plans to improve his fellow-citizens in knowledge and virtue. His heart was full of philanthropy, and his study, through life, seemed to be to do good. But, he is taken away in the prime of his usefulness. His pilgrimage is now over, and he has reaped the reward of the blessed.

Mr. Colburn had been a resident in Lowell for nearly ten [about nine] years; and, always identified himself with the interests of the inhabitants. The loss of such a man makes a chasm in society; and, years may elapse before it will be closed.

The following appeared in the same paper, September 16th, the day of his interment, and is from the pen of the late Elisha Bartlett, M. D., then a distinguished citizen of Lowell:—

"Dust to dust, and ashes to ashes," is the perpetually impending sentence of the Creator upon his creatures. And, amid more than common gloom, is that sentence this day uttered over the remains of the lamented COLBURN. It is not our purpose to enter into a history of the life, or to indulge in anything like an elaborate consideration of the character of our departed townsman; for, we have neither the means nor the ability requisite to the performance of this melancholy, but delightful duty; neither, as we well-know, can any poor words of ours lighten the sorrow or break up the darkness which his death has shed over a bereaved and afflicted family. But, in the privilege of friendship, we indulge the last and pleasure of leaving our simple memorial to the memory of one whom we knew, and loved, and have lost.

Mr. Colburn was, in its best and broadest meaning, a *great* and a *good* man. To no other individual, either among the dead or the living, has the cause of education in New England been more indebted than to him. His mind was thoroughly imbued with the best of all philanthropy, that which labors to make itself operative and practical,—which is felt not only by its possessor, but by all within the sphere of its influence. He not only desired the improvement and happiness of his species, but he set himself to work out that improvement, and to place its consequent happiness in their reach. He did not indulge in indolent and unproductive dreams about the perfectibility of man; but, while he yielded to none in the ardor with which he wished to witness this consummation, he also, which is far better, yielded to none in zealous endeavor for its accomplishment. To judge of a man's character with any thing like fairness, we must take into the estimate the circumstances by which it would be probably influenced. These, in the present case, so far as they can be so under our institutions, were untoward. Mr. Colburn was not born amid the shades of academic bowers, and neither the smiles of the opulent nor the patronage of the great greeted his entrance into life; yet, he won his way honorably to the high places of science, and sat down, a peer, among the benefactors of his race. He was self-made,—the sole architect of his fortune and fame.

From these qualities of the head, we turn to those better ones of the heart, which, after all, constituted the principal charm, and the crowning excellence of

Mr. Colburn's character. Like the habitual smile on his countenance, he had a serenity of soul which could have been the result only of high honor, sound principle, and genuine piety. His moral worth, like his mental power, was quiet and unobtrusive, and no man ever bore his honors more meekly than he. His religion was the fruit both of feeling and of thought, and it shed a constant and celestial light over the "daily beauty" of his life. Rarely has it been our lot to witness the elements of all excellencies so harmoniously mingled. He is taken from us in the "midst of his days," in the prime of his usefulness, and, as in our short-sightedness we are accustomed to say, prematurely. But, why prematurely? How fully and how nobly has he accomplished the highest purposes of our earthly existence, and although, when measured by the lapse of years, his life has been short; it has been long, if we estimate it as we should, by its fruits and its issues. He lived the happiest and the most enviable of all lives,—that of the CHRISTIAN PHILOSOPHER: he died the happiest and most enviable of all deaths,—that of the RIGHTEOUS.

E. B.

The friends of the late Dr. Bartlett will recognize, in the above, the familiar and unmistakable features of his own mind and pen.

In a weekly religious paper, entitled the Observer, edited at the time by Rev. Mr. Rand, appeared the following, as editorial.

We are not used to the work of writing eulogiums upon the dead; but, our feelings instinctively urge us to say something respecting the man whose name is at the head of this article.

Warren Colburn, taken all in all, was a most wonderful man. There was in him a combination of qualities which rendered him a friend to all, and which commanded the love of all. His was not a life of inaction. He lived to some purpose. With a constitution little fitted to the rough and stormy scenes of life, he set himself to work in his own appropriate sphere, and no man ever accomplished more. We have understood that Mr. Colburn's early life was not spent, as we should conjecture, from his attainments, amidst all the advantages of schools and academics; but, that he labored amidst great disadvantages in these respects. He was strictly a self made man. His efforts were well directed and efficient in respect to the improvement of the young. His Arithmetic introduced a new era in the history of that science, and opened the way for the numerous systems which have since been raised upon his superstructure.

His series of reading books have been also extensively adopted in all our schools, and are well adapted to secure the interest and profit of the schools.

He was an agent of the Merrimack Manufacturing Company in this place; which has sustained, in his death, an almost irreparable loss.

His attainments were great in all the branches of Mathematics and general science, and the cause of education through the country owes to his influence much of its present prosperity.

His disposition was amiable, and his hand was extended to all, without distinction, who claimed his friendship. He always appeared smiling and cheerful, and we are assured that he scarcely ever seemed less cheerful at his own fireside than in public.

Such was Warren Colburn, in his *scientific* and *social* qualities; but, from what we have seen and heard we should presume that his *heart* was impressed with the importance of deep and fervent piety. If we are not mistaken in this, Mr. Colburn presented a singular instance of a mind bent upon literary attainments, and yet deeply imbued with a spirit of religion. We would that all our men of learning were as sensible of their own mortality, and of the need of a preparation for the future life, as he was.

But, he is gone. His remains are with us; his immortal spirit has, we trust, gone to expand its powers, and to make more lofty flights in a purer and holier atmosphere. He has built his own monument, and it will stand longer than the mementos which other men can raise to perpetuate his virtues. The breaches which God thus makes, he alone can repair. Let us look to him in all our affliction, as he possesses the sources of consolations.

These articles, occasioned by the event of his death, serve to give expression of the prevalent feeling as pervading different portions of the community at the time of his departure. He was interred in Lowell; but, his body was afterwards removed to Mount Auburn, where a modest and durable monument was placed by his literary friends over his grave, with a simple inscription.

There will be added a few general impressions from the reminiscences of surviving friends, as more recently expressed.

"There are few men," says his friend, Mr. Batchelder, "who, in so short and quiet a life, have done so much good, and rendered their name so familiar. I remember, many years ago, on visiting, with him, a school in New Hampshire, on the invitation of the instructors and others interested in the school, that when I introduced him to one of the Trustees of the Institution, he manifested much surprise at his youthful appearance, and asked, 'Is this Mr. Colburn, the Mathematician?' remarking that, having heard so much of him, and of the good he had done in the world, he expected to see a man with gray hairs and bent with age."

His friend, Mr. Sherwin, says:—

Mr. Colburn was remarkable for simplicity of manners and character, sincerity, a high regard for truth, and an amiableness which endeared him to all his acquaintances.

James Hayward, Esq., says:—

Mr. Colburn was a modest unobtrusive man. I was first attracted by his scientific tendencies and tastes. I then sought his further acquaintance. I was struck with the strength and clearness of his mind, and the tendency of his inquiries to the practical and the useful. And, I was charmed with his simplicity and directness, his perfect truthfulness and honesty of thought and purpose. He was a man in whom there was no guile. His simplicity and directness were seen in all his pursuits; as well in his business as in his scientific inquiries, and his intercourse with society. In all, he was a man *in earnest*. I remember that I early got these impressions of him, and used to embrace every convenient opportunity of being in his society. His love of science made his society both entertaining and instructive, and the simplicity and benignity of his character made it absolutely charming. I reckon it among the peculiar blessings of my life, that I have been permitted to enjoy the acquaintance and friendship of such a man. The tendency of his mind was to scientific accuracy; and, he exercised it in the higher subjects of philosophical inquiry. His attainments in analytical mathematics were eminent; and, it is known that, in his leisure from business, he applied himself to the solution of some of the most difficult problems in astronomical science. But, the tendency of his mind was, as I have said, to the practical in knowledge. His study was to simplify science,—to make it accessible to common minds; and, in my opinion, his elementary books are instances of great success in this way; especially the "First Lessons in Arithmetic." I hold in great admiration Mr. Colburn's character as a student in science, a practical philosopher, a man, and a Christian. These are the impressions which he made on me; and, the lapse of more than twenty years has not tended to efface them.

James A. Treat, Esq., of Pittsfield, N. H., says:—

When I left Cambridge, 1832, I went into Mr. Colburn's counting-room, and remained there until his summons came. While in his counting-room, I became better acquainted. I there began to appreciate the good and noble qualities of his character. There, with others, I was irresistibly drawn to love and respect him. There I learned to admire his uniform urbanity, his pleasant look, his kind word, in giving directions or advice. Even in giving admonition, if necessary, his kindness was seen and felt.

In my mind's eye, I can now see him at his office. I can see his mild and

placid countenance, at his pleasant home. I can see him at the lecture room; giving instruction,—laboring hard and long for the good of his fellow-citizens. I can see his overseers, his operatives, his clerks, all having but one universal love and regard for him while living,—having but one universal tear at his departure. The eye of faith can now see him engaged in more exalted duties, and reaping a higher reward.

In personal appearance, Mr. Colburn was decidedly pleasing. His height was five feet ten, and his figure well proportioned. His face was one not to be forgotten. Persons have often been heard to say, were they artists, they could portray his countenance correctly. Dr. Furness, in his college reminiscence, says: "We used to admire Colburn's grand large eye." The distinguishing features of his face were his eyes and his mouth; both indicating the sweetness of his disposition, his benevolence, intelligence, and refinement. His manner was often abstracted, indicating intense thought; but, when his attention was called to persons and things about him, it was always with a countenance beaming with love and benevolence. The Rev. S. B. Babcock, of Dedham, gives the following anecdote: "I was a guest at his table, many years since, and he sat down to dinner in a silent, meditative mood, scarcely noticing his guests or his household. I supposed him rather destitute of conversational powers, and contented myself with looking upon, without listening to, the distinguished mathematician. About mid-dinner he suddenly exclaimed, 'I see it now: I think it will work.' He soon informed us he had been inspecting a rotary fire engine; but, did not quite understand the scientific principle. When his mind was at rest, he displayed colloquial powers highly gratifying and instructive."

Of his hesitancy of speech, his friends were not so much aware as a stranger might be. He was not fluent in conversation; neither was there any physical impediment. He used to say that he did not write easily, and attributed it to his want of early practice. Perhaps the hesitancy, which some observed, may have arisen from the like cause. In conversation, he was always desirous of using the most correct and expressive language, and endeavored to select the best words. In choosing his words, there was sometimes observable a slight wavering.

His disposition was remarkable for its evenness and serenity. Though possessed of great sensibility and feeling, he was never elated or depressed, but always cheerful.

The lapse of time has taken largely from the number of Mr. Colburn's acquaintances and friends, and has buried in oblivion much that should have been seasonably recorded. One of the most intimate of his friends, James G. Carter, Esq., survived him about sixteen years; and, in June, 1849, writing to Mrs. Colburn, relative to some

letters, &c., says: "You must find, or must have found, in looking over Mr. Colburn's papers, many more letters of mine, if they were preserved. They were not, probably, of much value, except as a transcript of my heart at the time: for, *no man* ever drew out my heart as did Warren Colburn. No one has ever filled the aching void made by his loss.

"If I can aid you about it, [a small matter of business,] I shall be most happy to do so when I return from Michigan, whither I expect to go, with Mrs. Carter and Ann Eliza, next week. [He went on this projected journey, and never returned; but, died in Chicago, a few weeks after the date of this letter. He goes on to say,] So I cannot see you till I return. Then, why will you not come up to see us, and bring your daughters. Mary looks like her father; and, when I think of the long, unbroken friendship that existed between Mr. Colburn and myself, I cannot bear to have his children grow up without knowing them. Warren came to see me once or twice while he was stationed at Shirley, on the Fitchburg road; and, I once went over on purpose to see him, but he was off at some other post on his line of operations, and that closed my acquaintance with him. I have often inquired about him, and always hear of him as being a good character, and giving promise of distinction in his profession.

Our habits, pursuits, and associations may have led us far asunder; but, I always revert to my acquaintance with you and Mr. Colburn, with the greatest satisfaction, and often feel quite sad that such pleasant reminiscences should fade away without a stronger effort to revive and perpetuate them."

To revive and perpetuate the fast fading reminiscences of one so widely yet so little known, has been the purpose of this desultory article. If its perusal should awaken in the mind of any reader further recollections of one so deserving of remembrance, it is hoped they too may be put on record for preservation, in order so to increase the stock of material that some more skillful hand may weave these gathered shreds into a Memoir, worthy of the name and character of WARREN COLBURN.

IV. EDUCATION.—PERCEPTIVE FACULTIES.

Lectures Addressed to Young Teachers.

BY WILLIAM RUSSELL, LANCASTER, MASS.

[Continued from No. 5, p. 144.]

NATURAL CONNECTION OF THE PERCEPTIVE AND THE REFLECTIVE FACULTIES.

To enable his pupils to extend the exercise of *attention* into that of continued *observation*, is the great aim of the teacher, who works intelligently on the material of mind, with a view to elicit power of thought. As far as the discipline of the perceptive faculties extends, the end of culture is to create an *observing* mind; from which, in the beautifully perfect arrangements of the great Author of intelligence, spring, in succession, a *reasoning* and a *reflecting* mind. The latter, however, can never be obtained without due obedience to the Creator's law of succession, in the development of intellect. The materials of reason and reflection lie, to a great extent, though not exclusively, in the field of observation; and, a regard to the law of natural and healthy development, therefore, induces the teacher to look carefully to the first steps of his procedure in the processes of cultivation. Having used his best endeavors to vivify and invigorate the power of attention, by all appropriate means and appliances, he proceeds to the use of every genial method of confirming the tendency of the mind to maintain that faculty in *habitual action*; to stamp on the intellect, as a characteristic trait, an inquisitive and appropriating spirit, which examines and searches into all things within its sphere, aggregates their riches to itself, and ever comes home laden with results for the exercise of powers and faculties yet greater than itself; and, to which it is ordained to minister. It is thus that the mind becomes the delighted and conscious agent in its own advancement.

PROCESSES BY WHICH THE HABIT OF OBSERVATION IS SECURED.

The frequent solicitation of attention, by the presentation of attractive objects, would, of itself, as we see in Nature's unaided training of the savage, provoke a tendency to observe and to inquire. But, the action of the intelligent teacher, in aid of Nature, and in obedience to her dictation, is founded on a law of moral certainty, derived from the study of the laws of mental action. Understanding and relying

on the susceptibility of the mind to the influence of the objects by which it is surrounded, and the perfect adaptation of these objects to that end; and, aided, no less effectually, by that inward thirst for knowledge, that burning desire to observe and understand, which actuates the young mind itself, the enlightened teacher knows he has but to attract *attention* to the object which he wishes to employ as a material in the fabric of knowledge. Attention gained, secures *perception*; if the object is properly selected, and skillfully handled.

The volatility of attention in the immature mind, which, if unguarded, tends to mental dissipation and superficial observation, the teacher counteracts by genial measures, adapted to arrest and fix this subtle element of mental power, and carry it successfully forward, from step to step in observation, till the end in view in investigation is attained. The successive steps of the mind's progress, under the guidance of a skillful instructor, in endeavoring to arrive at the result of true perception, exact observation, and complete knowledge, are suggestively indicated in the process of investigating the structure of any visible object, and naturally present themselves in the following order: *examination, analysis, inspection*; aided by *interrogation, direction, and information*, and extended successively to the more complex processes of *comparison* and *classification*.

Examination, as a Process in Intellectual Training.—In the absence of the prompting and directing power of genial culture, it is true, perhaps, that most of our race are permitted to fill the measure of their days without one definite or quickening thought of the objects by which they are surrounded for a life-time. The peasant boy, who, of all human beings, is the most favorably situated for the contemplation and intelligent study of nature, seldom experiences the friendly aid of a suggestive question, that might lead him to appreciate the elements of intellectual wealth, in which the field of his daily labor abounds. Education has given him the ability to compute his wages, to read, or to sign a receipt; and, thus to meet the humble demands of his animal subsistence. It may even have afforded him some formal instruction in grammar or geography. But, it has not even hinted to him that, in "herb, tree, fruit, flower, glistening with dew," there are wonders of skill, and beauty, and power, fitted to fill his soul with delight, and to exalt him to a higher intelligence; that, in the bud, as it opens in spring, in the expanded blossom of summer, in the tinted leaf of autumn, in the shell which he picks up from the sand of the brook, in the very pebble which he "turns with his share, and treads upon," there are offered to his mind whole volumes of the richest knowledge, which the study of a life-time cannot exhaust.

An eloquent American writer, speaking of the advancement of education, says : "The time may come when the teacher will take his pupil by the hand, and lead him by the running streams, and teach him all the principles of Science, as she comes from her Maker." The teacher is here rightfully represented as fulfilling, in his humble sphere of duty, the highest offices of philanthropy and of religion. Such is the teacher's noble and beneficent function, in favoring circumstances ; yet, not less when, yielding to the exigencies of life, he is confined within the walls of his school-room, but brings in Nature's apparatus from without, to give life, and meaning, and efficacy to his instructions, and win the young mind to the earnest and devoted study of the works of the Creator.

Intellectual Effects Resulting from the Examination of Objects.—

The zealous teacher, working with such light shed upon his labors, knows that, in presenting a product of Nature to the eye, he is presenting a germ of thought to the mind, which, under his skillful management, shall duly unfold, in leaf, and blossom, and ultimate fruit. He knows that, in the absence of a guiding suggestion, his young pupil may have looked a thousand times on that leaf, as a thing which did not concern him ; on the shell, as only something queer ; on the pebble, as an unintelligible intruder, perhaps, on his personal comfort ; on the flower, as something pretty, that his sisters are fond of ; on the fruit, as a sufficiently satisfactory morsel for his palate ; and, that thus, in the great universal hall of learning, stored with library and apparatus, the orphaned mind may have sauntered away the precious hours of early life, without having been induced to study a single lesson, or engage in a single exercise. All this the teacher is well aware of ; but, he knows, too, the hidden life and power that lie wrapped up in the little object with which, as a specimen from Nature's cabinet, he proceeds to magnetize the sentient intellects before him. He knows that, as surely as these susceptible beings are brought near enough to come within the range of action, they fall under the spell of its power, are charmed to rapt attention, and carried on, in wondering and delighted observation, till they are finally arrested by the grateful surprise of conscious knowledge, and advanced intelligence.

Is it a plant which forms the subject of the lesson he would give ? He has but, by a striking question, to break the crust of habituation, which has blunted the perception of his pupils, and hinders their mental vision. He has but to ask them to *describe* its parts, in detail, as he holds it up before them, and he has gained the grand preliminary condition of effective perception,—attentive *examination*. As

the description extends its ramifications, the weed, which had been a thousand times trodden under foot, without a thought of its nature or construction, becomes an eloquent expositor of Creative mechanism and life; its parts become organs and channels of vitality,—a wondrous laboratory of chemical elements and action; the individual object becomes a member of a family, each of whom has his life and his history, his birth, growth, maturity, and decay; leaving, as the moral of his story, the parting suggestive question, riveted in the wondering mind, “Am I not wonderfully made?”

One such result,—and the more common the object which secures it the better,—one such result is sufficient to ensure a repetition of itself, in a thousand other instances. The ice of indifference is broken; and the observer may now see clearly, through the transparent water, the many-formed beautiful pebbles on the sandy bed of the stream. The time and trouble of examination, it is now found, are amply repaid in the conscious pleasure of intelligent observation; and, they are no longer begrudged. The mind has now become desirous to observe, examine, and explore. It has already set out on a career which, were all educators intelligent agents, would be ceaseless to all to whose advancement it is their part to minister.

Example of a Successful Teacher.—A most striking exemplification, in this respect, of successful instruction, was often exhibited in the devoted labors of the late Josiah Holbrook, who, although the very extent of some of his plans for the advancement of popular education may have rendered their execution difficult for the endeavors of an individual, yet was uniformly successful in his attempts to introduce the study of natural objects, as a part of early education in all schools. Trusting to the power of attraction and development latent within a stone, picked up by the wayside, he would enter a school, with no other apparatus of instruction provided; and, holding up the familiar object, would succeed, by means of a few simple but skillfully-put questions, in creating an earnest desire in his young audience to be permitted to look more closely at the object. He would then hand it to them, and have it passed from one to another.

Having thus secured the preliminary advantage of *earnest attention*, his next step would be, by a few more brief questions, to lead his little class to a close and *careful examination* of the specimen submitted to their notice; and, to their surprise and delight, to enable them to see that the bit of granite in their hands,—although but one stone to the eye, at first sight,—actually contained portions of three different kinds of rock. He would then give his pupils an unpretending but thoroughly effective exercise in *analysis*, by inducing them to point out

distinctly each component element, apart, and to describe, at the moment of doing so, its points of difference from the others, by which the eye might recognize and the mind distinguish it.

Another stage, in the well-planned lessons of this true teacher, would lead to a yet closer *inspection* of the component elements in the object of observation, by the presentation of separate specimens of each, in *comparison* with the smaller portions of them perceptible in the stone. The transparency of the *mica*, its laminated form, its beauty to the eye, would all come up in turn, for due notice and remark; nor would its peculiar adaptation to several of the uses and conveniences of life be overlooked. The *quartz* element, with its beautiful crystalline aspect and forms, its value as a gem, its wide diffusion in the granular condition, its presence and its effects in the composition of rocks and soils,—all briefly exemplified and enumerated,—would form a copious subject of instruction and delight. The *feldspar*, too, with its creamy tint and block-like configuration, and its valuable uses in the hands of the potter and the dentist, would come in for its share of delighted attention and studious observation.

Here was the true office of instruction faithfully exemplified. Here was genuine mental activity, on the part of the pupil; and, here were its natural effects,—vigorous, healthy expansion and development, together with the pure, natural, and salutary pleasure of intellectual exercise,—more dear to the child than even his favorite play. Here, too, were effectually secured the moral influences of culture, docility, order, regularity, voluntary attention and application, gratitude to the instructor for personal favor and benefit consciously received, an earnest desire implanted for the true and enduring pleasures which spring from knowledge, and the first steps taken in the life-long pursuit of science. The teacher, having put himself into a true living relation to the mental constitution of his pupils, could, without delaying for formal calls to order or attention, proceed, at once, to the benign office of his vocation, as the guide of the young mind. By a wise preventive method,—not by authority, rule, or penalty,—he secured the devoted attention and good order of his pupils, and, not less, their own happiness, their sympathy with him, at the moment, and their habitual reverence for him, as the living source of knowledge.

After one lesson, such as has been described, the substantial and durable effect resulting from it was usually perceptible in the fact that, on the dismissal of the school, the juvenile members of Mr. Holbrook's audience would be found resorting to whatever place they thought likely to furnish them with specimens such as he had exhibited in his lesson. This was almost universally the case when the

lessor happened to be given in a rural region, where objects of the kind in question were easily obtained. But, not less zeal for collecting specimens for juvenile cabinets, would sometimes be manifested in the more confined sphere of city life, an instance of which it would be difficult for the writer to forget.

An eager group of little collectors were scrambling for specimens around the temporary shed of the stone-masons occupied in the erection of a public building. They were busily replenishing their pockets with such pieces as struck their fancy, and stopping now and then to compare specimens, or each to examine his own more closely. Drawing near to the juvenile company of geologists, as their heads were clubbed together in earnest inspection of a specimen, the observer heard one exclaim, "Well, I do not think it is the right kind. For, you know, Mr. Holbrook said the way to spell granite was not *g-r-a-n-i-t-e*, but '*mica, quartz, and feldspar*.' Now, there is not a bit of mica in any of these stones." The observer happened to know of Mr. Holbrook's visits to the school to which the boys belonged; and, as he saw that the little students had just found their way to the exact spot in investigation where Mr. H. would be glad to meet them, so as, by means of a little closer analysis, to enable them to detect the difference between granite and "sienite," he relieved their anxiety by telling them that they had better not throw away the pieces they had picked up, but carry them to the school-room, next morning, and ask Mr. Holbrook to tell them why there was no mica in their specimens, and what those black specks were. One of the little explorers returned to his home, on the following day, to tell, with a face all radiant with intelligence, about the quarries of Syene, in Egypt, the quarries of Quincy, and those of the "Granite" State, and even to go into some details, in which neither of his parents was sufficiently versed in science to follow him satisfactorily.

Analysis, in its Connection with the Discipline of the Perceptive Faculties.—An eminent writer has truly said that a dwarf, behind his steam-engine, may remove mountains. Analysis is the correspondent power of the intellect. It is the grand instrument in all the operations of the perceptive faculties. It is observation working scientifically; and, of all the implements of science, it is the keenest in its edge, the truest in its action, and the surest in the results which it attains. It is the key to knowledge, in all departments of intelligence; and, perfection in its processes is the crown of glory on the head of him who stands foremost in the field of scientific research. Education, as the power which trains and forms the mental habits, has no higher

boon which it can confer, as the result of years of practice and discipline.

Valuable, however, as this process is, education, in the history of the past, could lay but slight claims to the merit of having formed the mental habits which it implies; since the means and opportunities of analytic intellection were withheld or neglected, to a very great extent, in consequence of the omission to provide the requisite objects and exercises for the discipline of the perceptive faculties. Education, while it consisted chiefly in arbitrary forms of exercise on abstract principles, connected with formulas in language and in number, drawn from the sciences of grammar and arithmetic, precluded the exercise of perception, by causing the learner to assume, instead of investigating, the primary facts of language and of number. At the present day, we obey the law of inductive procedure, and substitute personal observation and distinct perception for wide assumption and broad assertion. This is true of, at least, the modes and methods of all who profess to teach philosophically, as not mere instructors, but educators of the mind. Still, there remains much to be done with reference to the early direction and training of the intellectual faculties, so as to ensure the selection and presentation of the proper materials on which the intellect should be exercised in the first stages of its course of discipline.

Analysis, as a process of observant mind, implies the presence of objects which, by its solvent power, it is to reduce to component elements; and, as the real object, the fact, the actual relation, precede, in the order of nature and development, the ideal image, the intellectual abstraction, the logical deduction, early education in its primary operations, should conform to this law of order and of progress, and, in prescribing its first forms of exercise and discipline, should obviously draw its materials from the external universe of palpable realities, and not from the internal world of pure thought, in which the young mind possesses so little conscious power. Nor is it well for the mind that the habit of analytical observation and study, so indispensable to its successful action, in all forms of acquisitive exercise, should be deferred to the later stages of intellectual culture. Facility in analysis, acquired by practice on the accessible forms and relations of external objects, is easily transferred, by analogy, to the arithmetical exercise of resolving complicated numbers into their simpler constituent groups; or, the grammatical one of reducing a perplexing period to its primary elements, and these, in turn, to their component parts.

Progress in mathematical science and linguistic study, would be much surer and more rapid, if, instead of being demanded of the

earlier stages of mental progress, it were postponed to a period subsequent to that of analytical exercise, practised, for years, on objects perceptible to the senses.

Analysis, as the systematic process of examination, is one and the same thing, in whatever direction it is applied; its power as an instrument of discipline, is as fully felt in investigating the structure of a plant as that of a sentence; and, the intelligent teacher, while superintending such a process, will feel the same weight of obligation resting on him in the one case as in the other. He will, accordingly, be watchful over the manner in which the process is conducted, that it be not superficial, or hasty, or partial, but thorough-going, deliberate, and exhaustive, as far as it ought to extend; and, that it be furnished with faithful expression, or record, at every step of its progress. It is thus only that the indispensable broad line of distinction can be drawn, which gives certainty to knowledge, by separating what has been examined from what has not been, and measures what is known by what has been done.

Inspection, as a Disciplinary Process for the Perceptive Faculties.

—When analysis has faithfully performed its peculiar task, and singled out for observation the very last component element in the object of investigation, there remains yet, to the attentive teacher, another stage of perceptive progress to be accomplished by his pupil, under the suggestive direction of a mind which has already traveled the path of knowledge. The searching *inspection of the individual elements* which compose a complex whole,—an inspection so minute, that each element may be described and defined in its distinctive unity of constitution and character, and, in the clearly traced relation which it bears to the whole, as well as in each of its own chief characteristics, or prominent features,—becomes, perhaps, in turn, an element in some wide-sweeping induction, for purposes of comparison and classification.

Elementary botany,—that which a young child is perfectly competent to study, and which requires but the seeing eye and the attentive mind, to examine and describe the different parts of a plant, or even a root, a stem, a bud, or a leaf,—abounds in the best of materials for exercise in close and minute examination of details. To render this process a tendency and a habit of his pupil's mind, is here the office of the educator. Yet, this is but one of the numerous resources of nature on which he may draw for the cultivation of the highest traits of intellectual skill and expertness, as attributes of the young minds, which it is his business to train to the highest pitch of mental power to which he can raise them.

In the examination of a plant, for example, he does not limit the attention of his pupils to the mere analysis of the whole into its parts. Every part, separately, he makes an object of distinct inspection and investigation, in every light in which observation or science enables him to hold it up. No feature of individual character is suffered to escape notice,—no detail, how minute soever it may be, in which it differs from, or resembles, a correspondent point of form or function, in another specimen of kindred character.

In lessons on animal life,—to use another example,—the juvenile student, under the charge of the watchful teacher, is directed to observe the fact, which minute inspection discloses, that, in one instance, where he would naturally, at first glance, think that he has seen two *feet*; he will actually discover, on closer inspection, two *hands*; that, in observing the figure of the chimpanzee, he has been contemplating neither biped nor quadruped, but a quadrumanous (four-handed) animal; and, that this distinction is founded chiefly on the careful examination of the member which he had been accustomed to call a *toe*, but which is, in reality, a *thumb*, designed to aid in the actions of grasping and climbing, which are so important to the animal's mode of life. The close inspection of one member thus becomes, for the time, the turning point on which the young student depends for the recognition of a grand distinction in nature, and for the true understanding and proper appreciation of the scientific term in which this distinction is recorded.

Interrogation, as an Instrument of Intellectual Discipline.—In the language of general writers on subjects connected with the experimental and tentative processes of science, man is said to *interrogate* nature. The figure is a most suggestive one to the teacher, with reference to his business and duties. It presents man in his appropriate attitude of an attentive and docile child of Nature, inquiring trustfully of her concerning the causes which lie too deep for mere intuition, but which her maternal spirit is ever ready to reveal to earnest desire and faithful endeavor. The human parent and the teacher stand, to the young mind, in the same oracular relation, as expounders and interpreters of the great volume of creation. But, how seldom is the inquiring spirit of childhood encouraged to avail itself of its lawful provision for the furnishing of that knowledge which it consciously craves, as the sustenance of its life! How seldom does the teacher feel the full force of the obligation which the inquisitive habits of childhood lay upon him, to encourage the spirit of curiosity which prompts the many questions of the child! How seldom does he feel that his business is to incite, and stimulate, and prompt, and enliven,

in every way possible to him, this primary instinct, which impels the mind toward the goal of knowledge! How seldom does he enter into the spirit of the wise suggestion of the poet; and, even when in the very act of feeding the intellectual appetite, so contrive as "by giving" to "make it ask!"

Book Questions.—The teacher is not usually so remiss in regard to the importance of interrogation, as a stimulus to intelligence, so far as concerns his own resort to that process. Far from it! He knows its value, as a pointer or guide-post, to definite results. Nor are there wanting instructors so reliant on interrogatory forms, and so distrustful of their own power to devise them, that they conduct the whole business of a lesson, following literally the numerous questions printed on the page of the text-book. Such questions, it is true, are not to be despised and rejected in the wholesale style in which they are sometimes disposed of by the young and sanguine teacher, who has just begun to see their inadequacy to the purposes and wants of personal instruction. The printed question, even when extended to minutæ, may be rendered very serviceable to the formation of habits of faithful application and close study, as well as accurate recapitulation; if the young student is directed to make use of it as a test, in regard to the exactness of his preparation for a personal examination on the subject of his lesson; if he is duly trained not to regard the printed question as merely the teacher's part in a verbatim mechanical dialogue between the master and himself, in which the last word in the sentence of the one speaker forms the literal "cue" to the first word in that of the other, but, as a criterion of his knowledge of the subjects, as a friendly intimation that, if he can not furnish an answer to the question before him, he is so far deficient in his preparation to give intelligently an account of the part of the subject to which the question refers.

Children's Questions.—But, it would be more to the purpose of the young teacher's business, if,—instead of the printed aid offered to him in what should be his own part of a lesson, and which, if he respects his own mind, he will draw only from his own resources, according to the needs of the pupil,—the page of the text-book abounded, rather, in the questions which *children* would like to ask, for their personal information. The judicious instructor will always make free use of interrogation, as a means of ascertaining or aiding the degree of his pupil's intelligence. But, he will not overlook the fact that this process, like that of the printer, in taking his proof impression, is to certify a result,—not to create it. The questions which the child is permitted or encouraged to put to his teacher, are,

often, the sole means by which the former is enabled to "set up" accurately in his mind the facts of the lesson required. The number and the closeness of these questions become, further, the expression and evidence of the interest which the pupil takes in the lesson. To the teacher who possesses the patient and sympathizing spirit of his office, these questionings come gratefully to his ear, even when they betray the "blank misgivings of a creature wandering in worlds not realized." It is then that he is most impressively reminded of the true nature of his work, as an intellectual guide and conductor. He is ever careful, therefore, to provoke, rather than repress, interrogation; and, even so to frame his own questions that they shall serve to call forth fresh inquiries from his pupils.

The appropriate discipline of the perceptive faculties, depending, as it does, on the frequent presentation of objects of sense, with a view to win attention, and secure exact observation, implies that the teacher resorts, on all occasions, to close questioning, as the suggestive process by which the pupil is induced to use his own perceptive power, to rely on the fidelity of his own observation, and thus to acquire a knowledge which is substantial and thorough-going. But, it is not less true that, in proportion to the pupil's interest in the efforts which he makes, and the progressive steps which he takes in every process, his very attainments will be suggesting and prompting further inquiries, for his future guidance. The spirit and intelligence, as well as the pleasure, therefore, with which he proceeds in his work, will depend, to a great extent, on the consciousness that he is not working in the dark.

Mode of Answering Questions.—The answer to the pupil's questions, however, the true teacher is well aware, is not always to come from the lips of the instructor. It is often left intentionally to be the fruit of the learner's further efforts and closer examination. To withhold an answer to the most eager question, is sometimes a truer kindness than to give it. The ripe and perfect fruit of knowledge must sometimes, like that of the tree, be patiently waited for, and wrought for.

Leading Questions.—The wise teacher, however, will know as well when to put the skillful leading question, which does not supersede, but rather calls forth the activity of the pupil's mind. The leading question, though unlawful at the bar, is, under the management of the prudent teacher, the very turning point, in some cases, which decides whether he is "apt to teach," as an intelligent guide to the results of actual knowledge and true discipline.

Direction and Information, as Didactic Processes Connected with the Exercise and Discipline of the Perceptive Faculties.—The answers

given by a judicious teacher to the questions of his pupils will often consist in references to the sources of information, rather than in direct replies. In the study of natural objects, it is peculiarly important that the pupil should see, and think, and judge, and discover, for himself. To such training in self-reliance and self-help, the exercise of the perceptive faculties on the details of form in animal, plant, and mineral, is preëminently adapted. The embarrassing complexity and intricacy, and the baffling abstruseness, and the perplexing obscurity, which sometimes characterize other subjects of investigation, and which call so loudly for the teacher's frequent aid to his pupil, do not exist here. The simplicity and the beauty of nature's products, invite and attract attention; and, every successive stage of examination leads unconsciously to another. The teacher has but to indicate and to prompt, and thus leave the mind the rich satisfaction of achieving its own progress. He is not tempted to fall into the besetting sin of instruction,—that of anticipating, and assuming, and asserting, and so quenching the mind's healthful thirst by the lukewarm distillations of precept and rule, instead of leaving it to refresh itself by drinking at the cool, vivifying fountain-head of original observation.

An eminent naturalist once gave a very impressive lesson in the art of teaching to one who is himself, professionally, an instructor. The question proposed to the savant was, "How may we distinguish snakes which are venomous from those which are not?" "Come into my study," was the answer, "and I will place before you some of each kind; and, then, by examining, you can see for yourself." It is thus the true teacher proceeds with his pupils: it is thus he gives certainty to knowledge, and clearness and vigor to the mental faculties.

As a guide and director of the mind, the intelligent instructor points his pupils to the sources from which he himself obtained information, and thus admits them to the honor of partnership with him in investigation and accumulation. Teacher and student thus become allied by friendly participation in the same pursuits; and, a high, though unostentatious, moral effect is blended with the cultivation and enjoyment of intellect.

The teacher, however, who thus wisely throws his pupils, as far as practicable on their own resources, does not thereby preclude the ample furnishing of all needed information, which intelligent appreciation and successful application may require. He will, on the contrary, take pleasure in disclosing facts, in tracing analogies, and furnishing explanations, when these serve to give additional value and attraction to the theme of his instructions. He will thus contrive, at once, to satisfy and to stimulate the mind's natural craving for knowledge, and

make every step of progress the foothold and the impulse to yet another. He will still be careful, however, even when imparting direct information, to confine it within those limits which shall leave a wide and inviting field for the pupil's own investigations, and secure his personal interest in future explorations, which may subserve the important purposes of acquisition, as connected with attainments in the various departments of education, or with those advances in science which may form a large part of his own conscious happiness, and contribute, ultimately, to the general diffusion of knowledge.

Comparison, as a Disciplinary Exercise of the Perceptive Faculties.—The unity of the intellect, as a principle in the human constitution, forbids any attempt at literal or exhaustive analysis, in the study of its diversified character and modes of action. In educational relations, more particularly, all attempts at the analytic observation of mental phenomena, for purposes of intelligent and healthful culture, must ever be regarded as merely analogical presentations and figurative expositions. The successive stages of mental development and discipline, in like manner, are incapable of being cut apart and separated by any dividing line of demarcation. On the contrary, they naturally blend into one another, with a closeness of connection, and a delicacy of shading, which does not admit of precise distinctions, or marked discriminations.

When we group, therefore, the various modes in which intellect manifests itself in action, and designate one of these groups by the term "perceptive," and another by the term "reflective," we recognize a distinction, with regard to which, even a superficial observer of the mind's activity, would not venture to say that it is not founded on an actual difference. Still, we should find it extremely difficult to lay down a precise line of demarcation, and say with certainty, in every instance, here terminates the perceptive, and here commences the reflective action of intellect. Thus, in assigning its place to the master faculty of intelligence, we should feel no hesitation in ranking *reason* among the reflective faculties. But, when this noble power descends, as has been so happily expressed, to the humble office of "judging according to sense," it necessarily partakes of the character of the class of faculties with which it mingles in action. It constitutes, thus, an element and a condition in *perception* itself; as is verified by the consequences of its absence, in the intellectual action of the insane person, who distinctly enough *perceives* the form of his friend, but, in the inexplicable aberration of reason, salutes him as a foreign ambassador, come to do him the honor of a visit, in consideration of his world-renowned skill in disentangling complicated questions in state policy.

Comparison combines, usually, an act of volition with the process of observation, directed to two or more objects, for the purpose of recognizing their unity or diversity of character; and, hence, is properly regarded as but the preliminary or introductory step to the act of *judgment*, which pronounces the case one of analogy or anomaly. It is not unusual, therefore, to class comparison as purely an act of judgment, or decisive reason; and, by its office, a *reflective* faculty. As a process of intellection, however, it obviously commences with the perceptive act of attentive *observation*; and, as a disciplinary and developing operation in mental culture, it falls under the special care of the educator, as an exercise in the early training and forming of intellectual habit.

Proper Rank of Comparison, as an Intellectual Process.—Regarded in connection with the study of natural objects, the act of comparison, is an exercise of the perceptive faculties, which, in the order of intelligence, is the immediate sequel to the processes of examination, analysis, and inspection. These, indeed, are but the legitimate preparatory stages for its wider mode of action, and higher offices in the sphere of intelligence. Yet, in its turn, it is but the humble ministration of intellect to the yet higher offices of *classification*, under the guidance of the master function of *induction*, which presides over all the varied forms of intellectual activity, connected with the observation and study of nature.

Intellectual Effects of the Discipline Resulting from the Exercise of Comparison.—Comparison, as a process of intelligence, commenced under the watchful eye of the teacher, on the objects of perception,—the only sure and firm ground of early mental development,—gives a certainty and a skill to the perceptive action of the mind, which tell, with sure effect, on all analogous operations of a more purely intellectual or even an abstract character, in later stages of education. The influence of the habit of careful and exact comparison, extends, with full effect, to the highest efforts of mature mind, in the most complicated and intricate relations of thought, in mathematics, in logic, and in language. Comparison, as the first step in the higher progress of the mind, when making its transition from the study of single objects to that of numbers, and grouping them, by their *analogies*, in *classes*, brings the intellect under the dominion of *order*, introduces it to the discipline of *method*, and ultimately rewards it by the recognition of *law*. *Principle* and *rule* then take charge of the intelligent mind; and, as “strong siding champions,” beat down every barrier to its progress toward consummate knowledge.

Natural Objects peculiarly adapted to the purposes of Comparison, as a Disciplinary Exercise.—As means of discipline for the perceptive

faculties, in various modes of comparison, the materials for practice, furnished in the different departments of nature, are peculiarly adapted to the great ends of education. Their mutual resemblances and contrasts, the prominent features of their correspondent forms, seem to solicit comparison and classification, as destined results of man's mental adaptation to the scene in which he moves, and which so abounds in objects of attractive interest,—the germs of intelligence, enveloped in consummate beauty, that they may lead to the conscious delights of knowledge.

By the introductory discipline resulting from the humble exercise of carefully comparing objects and their characteristic parts, the young mind receives its preparation for the scientific intelligence and the conscious pleasure with which it subsequently enters on the wide range of action afforded by the inviting analogies revealed in the study of comparative physiology and anatomy, and in all investigations to which science conducts, wherever exact classification and consummate knowledge are dependent on attentive and faithful comparison,—a condition equally indispensable, whether in collating the vestiges of past eras in the physical history of our globe, or those of language and of intellect, as revealed in the investigations of philology.

Classification, as an Exercise for the Discipline of the Perceptive Faculties.—This form of intellectual action,—which, in its various aspects, may be said to constitute and to consummate human knowledge, in whatever department we contemplate,—is the immediate sequel of the preceding act of mind, in collating the objects of observation, or their peculiar features and characteristics. The resemblances which comparison recognizes in objects, become the leading titles and significant designations of groups and classes. Intellect is thus freed from the burden of the endless and unsatisfactory task of wandering from object to object, in detail, without any conscious thread of connection or guidance, and without any suggestion of a definite end in view, in its wearisome mode of action. By the aid of classification, the chaos of disconnected individualities is converted into an orderly creation, where everything, as of old, is seen to exist “after his kind.” Knowledge thus becomes a series of aggregated accumulations, arranged and labelled to the intellectual eye; and, investigation is rendered a rational and inviting pursuit,—directed by definite aims, and leading to satisfactory results.

Benefits of Classification, as an Intellectual Exercise.—By the process of classification, man is enabled to trace the successive footsteps of the Creator in the outward world, to recognize the grand law of universal order, and yield obedience to its dictates in his modes of

mental action. The student of nature, pursuing his investigations in this spirit, is prepared, by successive illustrations of fact, to amplify his classifications into those wide inductions which are the glory of science, and which aid the intellect in accomplishing the vast generalizations for which its powers of comprehension and its ceaseless aspirations seem equally adapted.

The exercise of classification tends to create in the young mind the love of order and method. It is, in fact, a strictly logical discipline, resulting in the highest mental benefits, and preparing the heart for the influence of the most exalted moral principle. It belongs, however, as a process of mental culture, to a very early stage of intellectual progress, and begins appropriately with the first conscious steps of advancement in the observation and study of nature. The child, in Nature's great school, finds himself placed in a vast cabinet of specimens, which he takes a peculiar pleasure in examining, and from which, even when little aided by formal education, he draws, with delight, stores of personal knowledge, and the pure pleasure of the conscious activity which his spirit craves.

The objects of nature, as the results of a designing Mind, seem peculiarly adapted to the end of drawing forth the action of intellect and building up intellectual character in the human being. In no respect is this more true than with reference to the facilities furnished in the three great kingdoms of nature, for the purely intellectual processes of arranging and classifying the objects of observation. The young mind here finds itself placed in a sphere of order, in which every thing is arranged for the correspondent action of thought; in which every object invites to observation, and every group solicits a recognition of the principle of classification.

Early Training in Classification.—Furnished with such an apparatus for the purposes of instruction, the teacher has but to point suggestively to the successive classes of objects most easily accessible to the young learner in the great classified receptacles of earth, air, and water. He has but to encourage his pupil to collect, compare, and classify the various forms of mineral, plant, and animal, which lie within the range of his daily walks; or, even to deposit, in any convenient and suitable receptacle, groups of leaves of similar form, and to define the shape or the feature which, in his distribution of them, is made the ground of classification. The learner thus obtains a measure and a record of his progress in knowledge; and, the knowledge which he acquires, possesses a true and substantial character, which, in turn, affects that of his mind, giving it a taste for solid acquirements and genuine pleasures.

V. HOME EDUCATION.

WE hope to make this Journal a valuable auxiliary of the home, and of parents as well as of the school, and of teachers, having been long satisfied that the importance of home culture both direct and indirect, the unconscious as well as the designed tuition of parents, brothers, sisters, and companions, was strangely overlooked in our efforts to improve school-houses, text-books, and teachers, and the organization, and administration of schools, and that most of the tough and perplexing problems of public instruction and discipline would be solved, if not entirely anticipated, by proper domestic training. For the present we can not do more or better than to commend the whole subject to the thoughtful consideration of our friends, and to ask the cordial coöperation of the community with the labors of Rev. Warren Burton in this field. Of him and his labors, the Massachusetts Teacher for June thus speaks :

REV. MR. BURTON'S LABORS.

"Among our most valuable educational gatherings, are those that are assembled from week to week, by the Rev. Warren Burton, or through his influence. Mr. Burton must be counted among the truest benefactors and most disinterested philanthropists of our age and country. The time for writing his biography has happily not yet come, and we hope, for the welfare of our own and of coming generations, that it will be long deferred. Yet there are some things which we may be permitted to state.

Mr. Burton was born in Wilton, N. H., a small town, which with a population, even at the last census, of only 1,161, has yet sent between thirty and forty of her sons to College, and may be proud of not a few of them as men of mark. He was graduated at Cambridge, in 1821, and afterwards entered the ministry, but not without preliminary experience as a teacher. During the thirty years of his ministry, he has, with, we think, only one exception, refused to be settled, that he might be more at liberty, after the example of his Master, to "go about doing good." He labored, for some time, in the self-denying office of a city missionary, in Boston and Worcester.

Of the writings of Mr. Burton, that which is best known, and has been most widely influential, is "The District School as it was, by One who went to it." Though first published twenty-three years ago, it has lost none of its freshness. The old school-house on the top of

the hill, sweet Mary Smith, *Tholomon Icherthon* learning his letters, Memorv Wordwell spelling Jonas, the Snow-balling, Mr. Silversen going out of church, to mention no more persons and scenes, are depicted with such minute naturalness, such bewitching humor, and such good intent, that though read and re-read, they cannot cease to delight. For our own part, however resolutely we may begin, we can not get through the spelling of "A-bom-i-na-tion," as syllabified by Jonas' axe, and terminated by the flying of the chip to Memorv's nose without having our gravity completely upset.

"Scenery-showing, in Word-Paintings" is quite different in its character, but perhaps no less admirable in its way,—a charming series of landscapes in words. Whatever he delineates, Mr. B., holds a pencil of admirably graphic power; and its movements seem to be all devoted to the service of the True, the Beautiful, the Pure, and the Holy.

Six years ago, he felt that he must give up even this work for one in which he was still more needed, and where it might be necessary for him to live still more "by faith." He saw that with all the revived educational zeal of the time, with all the improvements in schools and modes of teaching, the great subject of HOME EDUCATION was comparatively neglected, and that this neglect was threatening to thwart, in no small measure, all our other efforts for the right training of the young, and to introduce consequences most disastrous to the rising generation, and through them to our country in successive ages. He saw no laborer specially devoted to this field; and he, therefore, resolved to go forth and enter upon it, though single-handed, without property to sustain him, and with no society to uphold him. His first going forth for this great object was from Worcester, in the spring of 1850, with credentials from the Mayor and City Council, and from nearly all the clergymen of the city. Attestations to the need and the usefulness of his labors have since been abundant, and from men of the highest rank in State and Church.

The plan which Mr. B., has especially urged in his lectures and circulars is the following: that during the more leisure season of the year, meetings of parents, teachers, and others, should be held, from week to week, for the discussion of questions appertaining to family discipline, to the relation of the home to the school, and to education generally; that some simple organization should be adopted to secure regularity and efficiency in these meetings; and that the discussion should be chiefly conversational in its character, with occasional lectures, and the reading of written communications."

We copy the following notice of Rev. Mr. Burton's labors in Newburyport from the *Newburyport Herald*.

"We alluded, a few days ago, to the efforts of Rev. Mr. Burton to awaken a stronger interest, on the part of parents, in the home education of their children. For some years past, his heart and strength have been given to this subject, in other places, with the happiest results. He lectured last Sabbath evening, in the Pleasant street church, before an attentive audience, upon the words, "be thou prepared," in which he endeavored to show the importance of a more careful preparation by those who are to assume the responsibility of training the young. His lecture was earnest, truthful, impressive. He spoke of the young child in the cradle. Its capacities are unformed; it may become an obedient son, a well-behaved pupil, an honorable boy, a high-minded man, a useful citizen, or the opposite. Whose skillful hands will dare undertake such a fearful duty, on the right performance of which so much depends? He who would learn a trade, devotes himself for years to the work; she who would touch the keys of the piano with skill, devotes many long and weary months to practice; but, who studies, who inquires, who devotes a thought to this all-important subject? If the child becomes a dishonor to the parents, they lament their misfortune, and sigh that theirs should have been so hard a lot; but, never think of their own guilty neglect, of what they might have done, and ought to have done, to develop the good, and restrain the evil, in that child. Should not the community awake upon this subject,—all to whom the education of the young is in trust,—parents, teachers, clergymen, in fact, everybody? Should not all see the importance of more interest in this matter, that home influence, and *street* influence, and *school* influence, may all be what they should in the education of children? This is one great object of Mr. Burton, to awaken a stronger feeling, especially in *home education*, for that is at the foundation of all other education, and if that is what it should be, we have little fears for the rest. Parents, who train up a family of good sons and daughters for society, have left a treasure behind them to exert an influence for good, long after their forms have mouldered into dust. We knew, not long since, a family meeting, when an aged mother called around her eight adult children, all influential, esteemed, and useful, and not a stain resting upon the character of one. These were *her jewels*, of which she had reasons to be proud, and for which the world blessed her, for it was to the judicious, firm, yet kind training of the parents that these children had become what they were. How much might be done, were a proper interest awakened in this matter! And, this is Mr. Burton's object,

to get parents together, that they may talk over the subject, and better inform themselves, and better prepare to discharge the duty of educators. Let a meeting be held, and subjects proposed like the following, suggested by him. "How much should parents depend upon school teachers to correct the bad dispositions of their children?" "How shall truthfulness and integrity of character best be inculcated and established?" "What is the effect of much of the light reading of the present day upon children, and what is to be done with reference thereto?" and many others? Let all speak, and tell their thoughts and experience; let the ladies hand in essays, and thus express their views, and we believe untold good would result.

A meeting was held in the Whitefield vestry, Monday evening, when Mr. Burton further explained his views. Brief remarks were also made by others, and a committee was appointed, consisting of the following gentlemen: Rev. Messrs. Vermilye, Horton, and Spalding, Dea. Wm. Thurston, H. B. Fernald, Esq., Mr. Geo. W. Hale, and Dr. Grosvenor, to endeavor to carry out, at the proper time, some of the valuable thoughts suggested. We understand Mr. Burton proposes to go elsewhere in the country. We can only say, may he receive the cordial support and confidence of the community, for he is engaged in a noble work. *We must take care of the young.* Laxity of principle, unwillingness to bear restraints, disregard to the authority of elders, a wish prematurely to assume the airs of men, have taken the place of that strict parental watchfulness, which our fathers so carefully exercised, and to which New England owes so much. Young America, as at present training, is as little fit to manage the destinies of our country, as Phæton the steeds of his father. May he be taught wisdom in time, for he will have a noble inheritance."

VI. PRUSSIAN EXPENDITURES FOR PUBLIC INSTRUCTION

COMPARED WITH FRENCH.

[THE following article is translated for this Journal by Miss E. S. GILMAN, of New York, from a work* on the Schools of Northern Germany, by M. Eugene Rendu, who was sent out by the French Minister of Public Instruction to examine their condition, of which *this* volume is the result. We shall have occasion again to notice the representations of M. Rendu, as to religious instruction in the schools of Prussia.

The Ministry of Public Instruction, in Prussia, is charged with the *direction*, not only of Education, but of Worship and Medicine. It is officially denominated *Ministerium der Geistlichen, Unterrichts—und Medizinal Angelegenheiten*.

The budget of this department, in 1853, reached the sum of 3,878,-
313 *thalers*, or 2,714,819 dollars, which were thus distributed :

Ordinary Expenses.

A. MINISTRY.

	Thalers.
Councilors,† of the central administration, salaries and personal expenses,	94,092
<i>Matériel</i> , Expenses of Administration, - - - - -	14,660
	108,752

B. WORSHIP.

EVANGELICAL WORSHIP.

Superior Ecclesiastical Council,‡ (<i>Ober Kirchenrath</i> .) salaries and expenses of bureaux, - - - - -	18,000
Consistories, (salaries and expenses of bureaux,) - - - - -	101,570
Pastors and churches, (salaries and assistance,) - - - - -	283,583
	403,153

CATHOLIC WORSHIP.

Endowment of dioceses, and of the establishments pertaining to them,	351,056
Clergy and churches, (salaries and subsidies,) - - - - -	383,046
	734,102½

* *De l'Education Populaire dans l'Allemagne du Nord.* 8vo. Paris, 1855.

† 1 Director, 4000 thals.; 1 Councilor, 3000 thals.; 11 Councilors, at from 2000 to 2,600 thals.; 2 Ecclesiastical Councilors, at 800 thals.; 3 Medical Councilors at from 1000 to 1,500 thals.

‡ 1 President, 4,500 thals.; 2 Members, at 2,400 thals.; 2 at 800 thals.; 1 at 400 thals.; 6 members without salary.

§ This inequality of revenues in favor of the Catholic Church is easily explained: the No. 6.—[Vol. II, No. 2.]—22

C. PUBLIC INSTRUCTION, ARTS AND SCIENCES.

OFFICERS OF THE PROVINCES.		Thalm.
Provincial <i>Schul-collegium</i> ,* (salaries and expenses of bureaux,)		48,840
Committees of examination,† (<i>wissenschaftlichen Prüfungs Commis-</i> <i>sioner</i> ,) - - - - -		6,592
		<u>55,432</u>
UNIVERSITIES AND GYMNASIUMS.		
Subsidies for the Universities and the Academy of Münster,‡		466,035
Scholarships of the State, - - - - -		10,444
Subsidies for Gymnasiums and the <i>Real Schools</i> ,§ - - -		292,458
PRIMARY INSTRUCTION.		
Normal Schools, (<i>Schullehrer Seminarien</i> ,) - - - -		118,955
Elementary Schools, - - - - -		187,267
Establishments for the blind and for the deaf and dumb, -		13,418
Orphan Asylums and other benevolent establishments, - -		75,198
		<u>394,838</u>
ARTS AND SCIENCES.		
Academy of arts, at Berlin, - - - - -		32,867
Academies of arts at Königsberg and Düsseldorf, - - -		12,160
Museum at Berlin, - - - - -		49,300
Academy of sciences at Berlin, - - - - -		20,743
Royal Library, - - - - -		24,180
Various expenses for art and science, - - - - -		46,282
		<u>185,532</u>

"endowment" of the State is a debt contracted by it after the secularizations effected at different periods, and for the last time in 1810, when the war for independence took place. The payment of this endowment was regulated in 1821, by the Royal Order of the 25th of August, and the *Bull de salute animarum*, of the 16th of July.

This endowment, although consecrated by these solemn acts, is nevertheless, annually the object of bitter polemics on the part of the Protestant Journals. The number of Protestants in Prussia, compared with that of the Catholics, is in the proportion of 18 to 11.

* Each of the ten provinces of Prussia is under the administration in regard to worship, public instruction, and medical affairs, of a provincial consistory, which like the ministry, itself, is divided into three sections. To one of these sections, the *schul-collegium*, here alluded to, are referred questions in regard to secondary instruction and the administration of the normal primary schools. The *schul-collegium* inspects the gymnasiums and the *real schools*, makes out the regulations, &c.

† These committees, composed of professors in the university of the province, examine the pupils leaving the gymnasium, previous to admitting them to the university. (*Abiturienten-examen*.) They have also to preside over the examination required of the future professors of gymnasiums.

‡ The Academy of Münster is an incomplete university. Neither Law nor Medicine is there taught. The bishop of the diocese, Mgr. Müller, has proposed to the king to reorganize this Academy upon a liberal basis, and to make it the University of the Catholic provinces of Prussia.

§ The *Real-Schools*, are that class of establishments which are adapted to the vocation of young persons not intended for classical pursuits, but whose scientific studies ought not to be limited to primary instruction. They constitute the intermediate superior instruction. Almost every city in Germany has its *real school*, or at least its *Burgher school*.

D. EXPENSES COMMON TO WORSHIP AND INSTRUCTION.

	Thalers.
For the clergy and school, councillors, (<i>schulrätbe</i>), in the Departments,*	52,950
Expenses for buildings, resulting from the right of patronage,	194,762
Additions to the salary of some ecclesiastics and some teachers,	179,45
Smndry expenses,	55,967
	<hr/> 483,134

E. MEDICINE

303,168

F. UNFORSEEN EXPENSES.

	19,965
Total of ordinary expenses,	3,457,113
Total of Extraordinary Expenses,	421,200
	<hr/>
Sum total,	3,878,313

If we deduct the expenses of public worship, there remains the sum of 10,368,-961 francs, (about 2,073,792 dollars,) devoted to public instruction in Prussia, in a population of 15,000,000, while in France, with a population of 35,000,000, the budget of public instruction, reaches the sum of 22,333,323 francs.

Let us examine the chapters in detail :

I. SUPERIOR INSTRUCTION.

There are, in Prussia, seven universities : Berlin, Bonn, Breslau, Halle, Koenigsberg, Greifswald, and Münster. Each of these universities, except the Academy of Münster, is the union of several different faculties. Under the name of the Faculty of Philosophy are comprised various subjects, which in France, with good reason, are assigned to the two Faculties of Sciences and of Letters. The word Philosophy, in this respect, is about as comprehensive now, in Germany, as it was in Greece at the time of Socrates or of Anaxagoras. Thus for example, in the university of Berlin, under the common title of professors of philosophy, are classed together M. G. Grimm and M. Dirichlet, M. Michelet et M. L. Ranke, M. Lepsius et M. Raumer, etc.

The entire expense of the seven universities of Prussia amounts to 559,623 thalers, (2,233,586 francs,) of which, as I have before stated, 466,035 thalers, (or 1,747,631 francs,) are paid by the State.

In France, the entire sum stated in the budget, for the eight faculties of theology, nine faculties of law, three faculties of medicine, eleven faculties of sciences, thirteen faculties of letters,† and three schools of pharmacy, does not exceed 2,786,636 francs.

* Each province is divided into departments, (*regierungsbezirke*), each of which has its council. This Board, corresponding to the council of prefecture in France, is composed of a certain number of counselors. (*regierungsraethe*), among whom one special councillor is charged with all that relates to primary instruction throughout the department. The *Schulrath* reports to the council all matters relative to primary instruction. He corresponds in the name of the council, with the *schul-collegium* and the ministry of public instruction, in regard to normal schools.

† Since the above was written, the minister of public instruction has endowed, in France, five new faculties of sciences and three faculties of letters. The total expenses of the faculties, in the budget of 1855, is stated as 3,361,741 francs.

	Francs.
Faculties of theology, - - - - -	149,000
law, - - - - -	770,700
medicine, - - - - -	694,440
sciences, - - - - -	488,700
letters, - - - - -	470,696
Superior schools of pharmacy, - - - - -	162,000
Expenses common to all the faculties, - - - - -	71,100
	<hr/> 2,786,636

The receipts and expenditures of the Prussian Universities are estimated as follows:

RECEIPTS.

Universities.	State Appropria- tions.	Founda- tions.	Real Estate, Franchises, &c.	Earnings.	Total.
	Thalers.	Thalers.	Th. s. pf.	Thalers.	Thalers.
Berlin,	151,462	50	250.14.5	5,698	157,210
Bonn,	101,050	277	2,453.	2,186	105,780
Breslau,	80,318		9,566.	1,129	90,890
Halle,	53,645	27,792	252.22.6	3,594	85,165
Koenigsberg,	71,310	40	7,099.	832	79,200
Greifswald,	1,200	57	60,377.	470	62,100
Münster,	1,250	12,578		1,450	15,278
	460,235	40,794	79,995.011	15,359	595,623
Plus	5,800				
	466,035		136,148 thalers, 11 silb.		

EXPENDITURES.

Universities.	Expense of the ac- ademi- cal admi- nistration	Salaries of Professors.	Institutes, Museums, expense of worship in the univer- sity.	Prizes, Scholar- ships, &c.	Expendi- tures for material.	Divers supple- mentary expendi- tures.	Total.
Berlin,	9,747	80,800	55,330	350	2,000	8,983	157,210
Bonn,	7,540	59,700	27,116	3,300	4,589	3,535	105,780
Breslau,	7,354	44,049	24,901	4,060	3,500	7,026	90,890
Halle,	6,870	40,076	21,651	7,926	3,460	5,182	85,165
Koenigsberg,	5,634	32,585	24,881	7,565	3,651	4,884	79,200
Greifswald,	4,030	30,755	17,735	3,676		3,900	62,100
Münster,	310	9,750	4,106	500		612	15,278
	43,489	297,715	175,720	27,377	17,200	34,122	595,623

It is well known that in all the universities of Germany, there are three classes of professors: the ordinary, or titular professors, (*ordentliche*;) the extraordinary professors, (*ausserordentliche*;) nearly resembling the adjunct professors of French faculties; the *privat-docenten*, whose position is similar to that of the *agrégés de médecine*, in France. The ordinary and extraordinary professors alone receive a salary from the State, and of course, the salaries of the former considerably exceed those of the latter.

In the university of Berlin, which numbers fifty-two ordinary professors and forty-two extraordinary professors, the rate for salaries of the former, (the salaries varying according to the nature of the instruction,) is as follows: 1,500 tha-

len for the theological professors; 1,460 thalers for the professors of law; 1,180 for the professors of medicine; 1,500 for the professors of philosophy. The salary of the extraordinary professors is from 380 to 520 thalers.

These fixed salaries, it is well understood, do not constitute the sole revenue of the professors in the German universities. These salaries answer to the gratuitous instruction, (*legere publice*), which the professors are obliged to give. But besides these lessons, which are less numerous and less important, the professors give courses (*lesen ein Collegium*) upon subjects chosen by themselves. These courses are called private lessons,* (*legere privatim*.)

Such an organization seems to operate, in Germany, greatly to the advantage of science, of the professors, and of the pupils. The financial position of the professors may thus be very advantageous, without the State's exceeding, in any way, the limits of credit allowed for the fixed salary—credit which, as we have said, amounts to 297,715 thalers.

II. SECONDARY INSTRUCTION.

Prussia contains 140 public establishments for secondary instruction, among which are 110 gymnasiums; that is to say, 110 institutions where the programme of studies is completely developed.†

Berlin has 6 gymnasiums for 570,000 inhabitants; Breslau, 4 for 90,000; Magdeburg, 2 for 50,000; Halle, 2 for 27,000, &c. Neither Paris, which with this proportion ought to have twenty colleges, nor cities like Lyons, Marseilles, and Bordeaux, can sustain a comparison, in regard to the number of their Lyceums with Berlin and the principal cities of Prussia. It is true that the sum of pupils in the French establishments is much greater than in the gymnasiums spoken of; thus, while the 10 gymnasiums of the department of Potsdam, comprising those of Berlin, do not contain more than 3,000 pupils, the five lyceums, and the two colleges of Paris have more than 5,000 students; but it would not be difficult to demonstrate that this very distribution of pupils, according to the German system, is in every respect greatly preferable to the accumulation which imposes, even upon Paris, a too limited number of lyceums.

While the Bonaparte lyceum is obliged to receive 1,124 pupils, that of Louis le Grand 880, Charlemagne 877, etc., only one gymnasium at Berlin, the *Friedrich Wilhelms Gymnasium*, numbers more than 500 pupils; the French gymnasium, in that city, does not admit more than 270. It is not, however, by the number of pupils, but by the character of the studies, that an institution of

* For example, the programme of 1832, thus announced the course of the celebrated philologist Bopp:

F. Bopp, doctor.

I. *Publice selectos Rig-Vedac hymnos interpretabitur d. sat. h. III—IV.*

II. *Privatim.* 1. *Grammaticam comparativam linguarum græcæ, latinæ et germanicæ d. Lun. Mart. Jov. h. III—IV tradet.*—2. *Grammaticam sanscritam, duce libro suo minore (ed. 2, 1845,) docebit, d. Lun. Mart. Jov. h. II—III.*

Now, these private lessons are paid for by each student, at a tax of about 20 francs for a half year. And since the professor reads to two or three *collèges* or classes, as it often happens, with 100 or 150 pupils in each, the supplement to the salary is triple or quadruple the principal.

† The Gymnasium, of Germany, and the Lyceum, of France, correspond to the Public Grammar Schools of England, and in the classical course are nearly equal to the Colleges of this country. There are not a half dozen academies or high schools in this country which can stand a comparison with any one out of ninety which might be named of the 110 Gymnasias of Germany, in the extent and thoroughness of its classical course.

public instruction is to be judged. It is far from my intention to intimate that the best students in our lycœums, in each class are inferior to the first scholars in the German gymnasiums. I believe just the contrary; but what it would be easy to show is, that in general, in the secondary institutions of Germany, owing to a smaller number of pupils, instruction is more generally and more equally distributed than in the French institutions.*

We must divide into two classes the 140 public institutions which have been mentioned; one class, 100 in number, participate in the grants of the State; the others, quite as important, are either entirely communal, (*städtische anstalten*,) or else are supported by private revenues and special endowments, like the gymnasium of Zeitz, in the province of Saxony, or the cloister of Magdeburg, which has a revenue of 34,800 thalers, (130,500 francs.)

Distributed among the 100 institutions in question, the grants of the State amount, as we have said, to 292,458 thalers. In France, the subsidies of the government, allotted to secondary instruction, subsidies granted to 57 lycœums, and in a very small proportion, to 66 communal colleges, amount to 2,314,307 francs.†

According to the statistical estimates, one million inhabitants include 93,454 male children, from the ages of 8 to 18. The population of Prussia being given, we must suppose that in that country are 1,401,810 boys between those ages. Admitting the supposition for a moment, that all the young people share equally in the secondary instruction, the State, in Prussia, would contribute toward the expenses of this instruction, for each one, a little more than 78 centimes. In France, with the same hypothesis and according to the same calculation, the share contributed by the State, the sum of the expenditures being given, would be only a little less than 69 centimes.

The sum of the grants accorded to secondary instruction, by the French government, is as much less in proportion to the corresponding total of the Prussian budget, as the first ought, in good logic, to be greater in proportion than the second. In fact, the institutions of public instruction in Germany possess peculiar resources, incomparably more extensive than those of our colleges and of our lycœums.

The sum total of the special revenues of the French lycœums is 315,578 francs, while that of the corresponding revenues of the Prussian gymnasiums is 415,906 thalers, or 1,559,847 francs.

The difference is still more striking when we compare the sums total of the general receipts of the two.

Total receipts, (French Lycœums,) - - - 8,882,082 fr. 93 c.

" " (Prussian Gymnasiums,) 1,008,335 thalers, 4,081,257 francs.‡

Only two lycœums in France have important revenues; Louis le Grand, which has 63,943 francs, and Napoleon, which has 93,099 francs. Next to these two lycœums come, in the order of their revenues, those of Rouen, Strasbourg, Lyon, Metz, Nantes, Douai, Rodez, Tournon, and Laval. The revenues of the other lycœums are more or less insignificant.

* In the Gymnasiums, one instructor is generally provided for every 20 pupils.

† Lycœums, 1,535,831 fr. 87 c. Scholarships and reduction of taxes, 679,244 fr. 40 c. Assistant to communal colleges, 99,231 fr. 06 c.

‡ This disproportion is easily explained; boarding schools being almost unknown in Germany. The proceeds from boarding schools alone, in the receipts of the French lycœums, amount to 4,346,224 fr. 97 c.

On the contrary, look at the Prussian establishments. Passing by the six gymnasia of Berlin, whose total revenue is 51,953 thalers, let us consider the gymnasia of the provinces.

		Revenue.	
Gymnasium at Pforta,*	- - -	41,116 thalers,	134,185 francs.
" Liegnitz,	- - -	25,193 "	94,472 "
Latin school at Halle,	- - -	5,291 "	19,832 "
Gymnasium at Münster,	- - -	8,172 "	30,445 "
" Duisburg,	- - -	5,621 "	" "
" Cöesfeld,	- - -	4,995 "	18,761 "
" Bonn,	- - -	7,170 "	26,887 "
" Oppeln,	- - -	5,376 "	5,376 "
" Gleiwitz,	- - -	5,719 "	5,719 "
Etc., etc.			

The financial situation of the gymnasia is, therefore, generally very good. The advantage which the 110 Prussian gymnasia possess over the 57, (now 66,) lycæums of France, in regard to their special revenues, is very great.† The average of these revenues, for the latter, is 5,538 fr. 40 c.,—for the former it is 12,579 fr. 65 c.

The Prussian gymnasium admitting, almost without exception, only day scholars, their general expenses are not very complicated. We may divide these expenses into two divisions: salaries of professors—and matériel and expenses of administration. The sum total of the salaries is 719,479 thalers. The expenditures of this nature, in the gymnasia of Berlin, are thus fixed:

Verder gymnasium,	- - - - -	15,624 thalers.
Cologne "	- - - - -	12,212 "
Frederic William "	- - - - -	35,925 "
French "	- - - - -	8,700 "
Joachimstal "	- - - - -	17,289 "
Berlin "	- - - - -	15,878 "

The salaries of the directors of these six gymnasia are from 1,500 to 2,500 thalers.

In the provinces, the salaries of officers, even of the same rank, varies from 600 thalers, (as at Münsterfeld,) to 1,500 thalers, (as at Königsberg.)

The salaries of the professors are in proportion to those of which we have just spoken. In Berlin, these salaries vary from 1,400 to 1,600 thalers. In the provinces they are as small, even for the higher professors, as 900, 700, 500, and 400 thalers.

The expenditures of the second class, (expenses of administration,) are not

† Boarding School.

† The annual income of the Endowments for Classical or Grammar Schools in England, in 1851, as estimated by the Charity Commissioners, was £152,047. According to a writer in the North British Review, (Feb. 1856,) there were 118 Grammar Schools which severally enjoy an annual income, independently of fees from pupils, of more than £300, (£1,500.) About 67 of these are returned at £600; 33, at or above £1000, and at least 15 at or above £2000. The following are given as specimens of the latter class:

Bedford Grammar School has an annual income of	- - - - -	£3,000
Shrewsbury,	- - - - -	3,100
Manchester,	- - - - -	4,400
Birmingham,	- - - - -	10,000
Winchester,	- - - - -	14,000
St. Paul, (London,)	- - - - -	5,200
Eton, (Windsor,)	- - - - -	7,000

very great in the German gymnasiums. In the first place, the system of boarding schools is almost unknown. Moreover, even in the establishments where boarders are admitted, the administration is very simple; the office of a censor does not exist; the director governs the gymnasium, having under his direction a person having charge of the matériel, &c., whose duties correspond to those of the steward in our lyceums: but though having the general government, he is still a professor and has classes like his colleagues, though not quite so many. The expenses of administration do not exceed 954 thalers at Zulichan, and 1,042 thalers at Putbus.

III. PRIMARY INSTRUCTION.

The sum devoted by the State of Prussia, (out of a total expenditure of 14,-800,000 francs,) to primary instruction, is, as we have said, 594,838 thalers, or 1,489,942 francs, besides about 200,000 thalers, 750,000 francs, employed for additions to salaries and the expense of buildings, resulting from the right of patronage, the population being 15,000,000. The sum in the French budget thus employed for 35,000,000 inhabitants is 4,970,000 francs, besides 748,000 francs devoted to the expenses of inspection; thus, in Prussia, the State, to each million of inhabitants, devotes 149,996 francs to primary instruction, while France devotes to it 158,833 francs.

It should be added here that by virtue of a principle, the application of which would be difficult in France, the State, in Prussia, only by favor, (*aus gnade*,) interposes in the expenses of primary instruction. Thus, as in England, a great number of schools are supported by special funds, arising from endowments. Others are supported by subsidies paid by the communes, the school societies in the country, (*Laudschulverein*,) or the departments, (*Regierungs Bezirke*.)

A *school society* is composed of all the landed proprietors, without distinction, and the fathers of families in the circumscription of the commune, or, in certain cases, of several communes. The ordinary communal resources, united with the academic remuneration or with the revenues of deeds of gift, not being sufficient to defray the expenses of founding or of reconstructing schools, the necessary expenditures are met by a special tax, of which the quota is essentially variable, charged to the fathers of families, (*Hausvater*.)

This last word here presents a meaning analogous to that which the Roman law gave to it. It includes every inhabitant of the commune *sui juris*. Except the clergy, school teachers, soldiers, and hired persons, no one is freed from the contribution, whether he has children at school or not. It is a matter of general interest to which neither the law nor custom allows any to remain a stranger.

The contribution is ordered by the council, and the assessments are regulated by the communal authorities, in concert with the representatives of the school societies.

This contribution is proportioned to the revenue derived from lands, industry, and property of all kinds. It is, in truth, an income tax, a kind of impost which is well known to be nothing new for the legislation nor formidable for the customs of Germany.

The tax has one remarkable feature; that it rests upon lands as a real charge. Should the property to which it is attached be divided, each part remains encumbered with its quota of the contribution. And it is thus that the care of the moral and intellectual interests of the people is promoted, beyond the Rhine, to the highest rank of public duties.

It is only in case of these various resources proving insufficient that an appeal can be made to the aid of the department or the liberality of the State.

We can now give an account of the disproportion in the expenses charged to the State, for services of the same nature, in the French and the Prussian budgets.

FRENCH BUDGET.

Grants to the communes for the ordinary expenses of their communal schools,	- - - - -	3,560,000 francs.
Also, grants for the construction, repairs and locations of school-houses,	- - - - -	900,000 francs.
		4,460,000

PRUSSIAN BUDGET.

For the corresponding expenses, - - - - - 1,418,760

It is also necessary to understand that in this sum of 1,418,760 francs are included expenditures, the greater part of which, in France, are charged to the Ministry of the Interior; i. e.,

Establishments for blind youths and for the deaf mutes, - 15,418 thalers.
 " for orphans and for benevolence, - - 75,198 "

For expenses specially applicable to primary schools, properly so called, (aid toward school-houses and toward the salary of teachers,) we can only state the sum as 187,267 thalers.

It is not altogether useless to notice the division of this sum among the 26 *circles or departments*. This corresponds to that mentioned in the French budget as "Grants to the communes for the ordinary expenses of public schools," a sum amounting to 5,179,966 francs; and as a German *circle of councils*, (*Regierungsbezirk*, corresponds to a French department, a comparison between them may be interesting.

PRUSSIAN DEPARTMENTS.

	Thalers.		Thalers.		Thalers.
Koenigsberg....	5,99	Breslau	4,764	Münster.....	13,676
Gumbinen	4,516	Liegnitz	425	Minden	8,135
Danzig.....	8,942	Oppern.....	3,667	Avusburg	4,231
Marienwerder ..	2,935	Berlin.....	2,658	Coblentz.....	2,682
Posen	27,638	Potsdam.....	7,586	Düsseldorf....	7,194
Bromberg.....	4,514	Frankfort.....	2,000	Cologne	1,599
Stettin.....	4,284	Magdeburg	8, 02	Trèves.....	2,755
Cöslin.....	2,845	Meyebourg.....	3,730	Aix-la Chapelle.	1,527
Stralsund	294	Erfurt.....	2,638		

FRENCH DEPARTMENTS.

	France.		France.		France.
Ain.....	77,746	Aude	79,183	Creuse	65,718
Aisne	96,609	Aveyron	65,792	Dordogne	52,560
Allies	15,552	Cantal.....	41,606	Doubs	21,583
Alpes (Basses)	125,315	Charente	39,543	Drôme	78,014
Alpes (Hautes)	93,896	" Inférieure..	8,327	Gard	8,000
Ardèche	69,961	Cher	7,195	Garrone (Haute	70,136
Ardennes.....	31,863	Corrèze.....	93,478	Gers	98,981
Ariège	91,515	Corse	39,711	Lozère	101,598
Aube	37,997	Côtes du Nord.	6,902	Etc.	

The average of the grants for each department, (*Regierungs Bezirk*.) is 27,009 francs; for each French department it is 56,976 francs. Still, it must not be forgotten that in the sum of 3,179,966 francs, corresponding to the 702,251 francs, 25 c. of the Prussian budget, are only comprised the grants for the ordi-

nary expenses of the public schools; besides this sum, the extraordinary and special expenses defrayed by the State, amount to 1,855,715 francs, 29 c.

The average salary of instructors teaching in the towns, in Prussia, is about 800 francs; that of a village master does not exceed 350 francs.

Such a salary is quite out of proportion to the expenses which a teacher, who has a family, must incur. This insufficiency has given rise to a custom which assuredly is not quoted as an example to be followed, but as an indication of the zeal of the rural population of Germany, in supplying the wants of the humble teachers to whom are committed the interests of education. In many villages the instructor possesses what is termed the *right of the table*; he dines from house to house, and his place is, in turn, at the tables of all the *fathers of families*, (*Hausvater*.) in the commune.*

There are, moreover, in the hamlets of some departments, especially those of Oppeln and of Coblenz, families, who rather than dispense with an instructor for whom they are not even able to build a school-house, furnish him, each in turn, with lodging and fire: the instructor becomes, successively, the nocturnal guest of all the inhabitants.

In spite of these expedients, we can understand how the lot of village instructors has been the subject of many complaints. In a neighboring country to Prussia, in Saxony, the law, in imitation of the French law, has fixed the minimum for the salary of school-teachers at 450 francs. And, at this very time, the superior administration in Prussia, is engaged in considering the means of placing the compensation of teachers more on a level with their true social position.

If, however, the principle of a minimum of salary seems needful to be adopted by the Prussian administration, it is not desirable to abolish the custom according to which young teachers, acting, at first, in virtue of a simply provisory title, only receive a normal and complete salary after a final nomination.

Only those candidates who, at the time of their examination, have received a certificate of capacity, (*Wahlfähigkeit-Zeugniss*.) of the highest order, can be nominated, with a definite title, at their entrance into the career of instructors.

The others must practice, at least two years, in a public or private school, by virtue of a provisory permission. These two years are a time of probation, at the end of which the testimony of the academic authorities, as to aptitude, moral disposition, and capacity, can alone insure to the candidate, a definite appointment. Till such a time the teacher has no right to the entire salary belonging to the post occupied by him.

While the greater part of the expenses relative to primary schools, in Prussia, is defrayed by the communes, on the contrary, the State assumes almost the entire expenses of the normal schools.

There are in Prussia, 48 normal schools, for the support of which the State, every year, makes a grant of 118,955 thalers, (446,081 francs.) The corresponding sum in the French budget does not amount to 200,000 francs. The special incomes and revenues of the Prussian establishments are, in all, 58,102 thalers or 217,282 francs. Those of the French schools amount to 401,988 francs. The average of expenses in the former is 3,667 thalers, 13,741 francs.

* This practice resembles that which still prevails in certain French departments, especially in that of Haute Loire, where the poor school-mistresses belonging, under the name of *Béates*, to a kind of order, do not receive any compensation from the municipalities. These devoted women carry to the utmost degree, the spirit of abnegation which is produced and sustained by religious thoughts: they seek from door to door what is necessary for their

It may not be useless to present a statement of the receipts and expenditures of some of the normal schools, showing the part contributed by the State.

Normal Schools.	Total Expenditures.	Salaries of Teachers.	Grants from the State.
	Thalers.	Thalers.	Thalers.
Normal school of Braunsberg,	4,470	1,505	4,166
Eylau,	4,573	2,120	4,009
Angerburg,	4,260	2,100	4,223
Kamlanc,	5,838	2,542	5,817
(Preparatory school at) Margrabowa,	100		100
Marienburg,	4,215	2,629	4,215
Grandenz,	5,058	2,410	1,500
Breslau,	4,915	2,470	1,526
Steinau,	4,442	2,470	4,309
Benzlau,	4,050	2,275	
Berlin,	8,386	5,955	3,800
Copnick,	9,604	4,555	5,630
Münster,	2,846	820	1,080
Meurs,	4,170	2,200	3,670
Kempen,	6,480	2,670	6,480
Etc., etc.	Brühl,	6,680	2,960
			6,600

The expenses of the inspection of primary schools amount, in France, to about 750,000 francs; in Prussia they do not exceed 70,000 francs. The reason of this difference is very simple: beyond the Rhine, the inspectors do not constitute a corps of special officers; they are all taken from among the clergy, and invested with a scholastic mission, which is considered as the natural consequence of their duties; they receive no salary but merely an indemnity for moving about, which for each one, is not more than 200 or 250 francs.

One inspector has the school direction of a circle, (*kreis*.) This circle includes from 25 to 40 schools; charged with such a small number of institutions, the *kreis schul inspector* visits them often. People in Germany can not understand how 300 and 400 schools can be given in charge to one man alone.

In order that the application of such a system may be practicable, one condition *sine qua non* is, that the clergy should furnish a considerable number of men capable of showing in the school, and under the eyes of the instructor, that they are acquainted with school matters. To this end it is required of the theological candidates in Germany, that they should pursue, at the same time with their other studies, a special course of pedagogy. Moreover, the protestant candidates are obliged, before undergoing an examination *pro Ministerio*, to pass six weeks in a normal school. In regard to the Catholic clergy, the government could not lay down this injunction, but it has been carried by the voice of the council; and at the present time, in the dioceses of Cologne, Münster, Breslau, Fulda, (in Hesse,) those young ecclesiastics whom a special calling seems to point out as designed, in future, for the functions of *kreis schulinspector*, also follow, for two months, the courses of the normal schools, for which an excellent moral superintendence has gained the confidence of all the bishops.

Thus, the expenditures of the State, for primary instruction are, in Prussia, rather less, in proportion, than in France.

THE foregoing comparative view of the expenditures of the Prussian and French Governments on account of public instruction is incomplete, because in both countries there are large sums appropriated for educational purposes introduced in the budget of the Department, or Minister of War, of the Interior, of Commerce, &c. And in neither case do we get at the actual cost of public schools of different grades, because we do not know the amount realized from endowments, from municipal taxation, or from fees paid by parents.

We give below the appropriations, by the British Government for Education, Science and Art, for 1856.

1. Public Education, (Primary Schools,) Great Britain,	-	-	£451,213
Science and Art Department,	-	-	64,675
2. Public Education, Ireland,	-	-	227,641
3. Commissioners of Education, Ireland, (extra office expenses,)	-	-	605
4. University of London,	-	-	3,879
5. University of Scotland,	-	-	7,570
6. Queen's University in Ireland,	-	-	2,415
7. Queen's College, Ireland,	-	-	4,800
8. Royal Irish Academy,	-	-	533
9. Royal Hibernian Academy,	-	-	300
10. Belfast Theological Professors, &c.,	-	-	2,975
11. British Museum,	-	-	85,643
12. National Gallery,	-	-	17,639
13. Scientific Workshops and Experiments,	-	-	4,609
14. Royal Geographical Society.	-	-	500
15. Royal Society,	-	-	2,000

From the above table, it appears that the appropriations of the British government for Primary Schools [including elementary instruction in Drawing, and the Department of Science and Art,] exceeds 18,000,000 francs, and in proportion to the population is larger than that of France or Prussia.

VII. SCIENCE AND SCIENTIFIC SCHOOLS.

BY JAMES D. DANA.

Silliman Professor of Natural History in Yale College.

An address before the Alumni of Yale College, at the Commencement Anniversary, August 1856.

THESE annual pilgrimages over the breadth of the land to the groves of our Alma Mater have deep meaning. No duties of penance, nor hopes of ghostly reward, turn hither our steps. Thoughts of the past possess the soul, rather than care for the future: the familiar faces, the old red buildings, the sheltering trees, and the scenes of mirth, of friendship, or of serious effort, here enacted. Still more stirring is the consciousness with each of us, that amid these groves the mind first rose into manhood, and collected strength for the conflicts of life:—the mind's birth-place,—should not the spot be honored?

Besides these reflections, there is the pride, the just pride, that the nation has within these halls one of its best and most abundant sources of wisdom and virtue;—wisdom that takes hold on heavenly things while striking deep into the things of earth; virtue, that has its sure foundation in universal right and universal freedom.

It is natural on meeting friends, long absent, to seek out the marks of progress, to recount together the joys and trials along the way of life,—the new fields the affections have explored, the new conquests in the career of study or duty, or, perchance, the ineffectual labors and blighted hopes that have demanded still higher conquests. It is natural to ask, whether this or that one has fulfilled the promises of youth; whether he has become wiser with his years, and has expanded in spirit as well as intellect with every new movement of mankind; or, whether the dead languages still lie dead in his soul, himself a thing of the past rather than of the living world. With the varied responses to these and other thoughts, we find some occasion for sadness; much for delight and

gratulation ; and, however it be, there is always happiness and invigorating influence from interchanged words and sympathies.

But with many, the inquiries will not stop here. How is it, they add, with our Alma Mater? Does the honored institution show signs of growth in these growing times? or is she linked with the past rather than the future, resisting progress as if it led only toward evil? All life in nature involves change; and there is no hope for humanity except in the same universal principle: but, with perverted view, is change here looked upon as only a step toward destruction?

Sounds have gone forth from these groves, which have told that Yale is awake to all that stirs the world around, declaring that she recognizes in man, yea, in all men, the divine image, and seeks to promote the full expression of that image as the highest exaltation of humanity.

Again, in her literary course, there is progress, as regards the range of studies, the character of examinations, the style of thought, and grade of scholarship.

There is another point of interest connected with the world's progress. The researches of the past one hundred years have opened new fields of thought, new revelations of profound truths direct from God's works, and the world, through the energies thus derived, is pressing onward with accelerating speed. Through the darkness, black as night, that seemed to be a bound to past time but 6,000 years off, geology has opened a vista in which she has traced the Divine Word, in glorious thoughts, all along the Ages. How does the College treat these new notions, and science generally? as modern inventions of Satan? Does she turn her back, and cry "*Procul!*" Does she adopt the half-stereotyped phrase, "The infidelity of modern science," and shed bitter tears because she can not help it? Does she regard the Arts as only so many ministers to luxury and debasement?

There still stands among us one whose eloquent words have for fifty years made the truth resound through these consecrated halls, and whose far-reaching tones have been reëchoed from every portion of the land. And thus Yale College has ever been in the van, never afraid of the progress of truth.

Yet there are many who still look with distrustful eyes on science: (under this term science you will understand me, here and elsewhere, as referring to the science of nature.) They seem to see a monster swelling up before them which they can not define,

and hope may yet fade away as a dissolving mist. They deprecate its influence upon our literary institutions, and the great interests of mankind. The word *nature*, though another expression for God's works, appears to them to smack of Atheism, and all education that touches on the useful, to be tainted with the mammon of unrighteousness. They overlook the fact that almost all works on science in our language, endeavor to uphold the sacred Word, those opposing it being exceedingly few; and that infidelity proceeds not from science, but from that one fatal and prolific source, man's depravity.

Notwithstanding all the protestations that may come from such unbelievers in God's revelations through nature and his plan for human progress, Yale College is ready to encourage science on a scale commensurate with its importance. For some years, the scheme has been recognized in her catalogue, under the title of "The Department of Philosophy and the Arts;" and now it is proposed to realize this scheme, at least in some of its branches. She would not, however, commit the folly of sacrificing herself in deference to philosophy and the arts. Yale will stand as she is, abating not her terms of admission, nor her grade of scholarship, and aiming still to give that thorough classical training, and that broad foundation of principles in the departments of nature, mind, and moral truth, which tend to the complete cultivation of the man. The system she has hitherto followed, though admitting of some improvement, affords in fact the true basis for the student that would ascend the highest paths, whether of literature or science. But she also recognizes that God has purposes of love in opening to man these other avenues of knowledge, and she would offer a place along side of the Academic Department for "Philosophy and the Arts," in their fullest display, where mutual benefits may be derived, and the ripening man find development, whatever his tastes or pursuits.

My object at this time will be mainly to give some account of the university feature in education which it is proposed to connect with the existing college system. But the claims of science are not so generally admitted or understood as to need no advocate; and I ask your attention first to some thoughts on this subject.

When man, at the word of his Maker, stood up to receive his birthright, God pronounced a benediction, and gave him this

commission: "REPLENISH THE EARTH: SUBDUE IT: AND HAVE DOMINION OVER EVERY LIVING THING."

"SUBDUE AND HAVE DOMINION." These were the first recorded words that fell on the human ear; and Heaven's blessing was in them.

Man has long obeyed the mandate in bridling the brute races. But there is a deeper meaning which he has been slow to discover. In utterances, not to be mistaken, they declare to him:—"All the powers of nature, both animate and inanimate, are your heritage. The air, the waters, the earth, the light and the fierce lightning, as well as the productions of sea and land,—all are at your bid. Subdue; and they shall be your obedient aid, ministering to your necessities, your joys, and your highest progress." Even as the Being above us holds the universe in his hand, so man was to show forth the divine nature within him, by bringing under his ken and power, the world in which he was placed, and wielding its forces at his pleasure.

Such a Divine command was a lofty exhibition of the majesty of man. The earth, in its progressive preparation for him, had been receiving one perfection and adornment after another. The stars and earth had been bound together in system, and messages of light passed in mutual recognition of their one Author. The foundations of the earth had been laid in enactments inscribed on every crystal and grain of sand or drop of water. The kingdoms of life had appeared as still nobler expressions of his wisdom. And God, from the height of his glory, had pronounced all his work GOOD. Thus the earth had been the place of Divine regard and favor: the Infinite Author had written it over with declarations of himself, and filled it with messages of his love.

But this volume of eternal wisdom remained yet a sealed book. What an unspeakable exaltation of Man, that to him were given the keys! the power to open, and read, and apprehend, although its words were in the hand-writing of the Infinite Author! to appreciate beauty which to Him was beauty! to decipher and understand the profound system of the universe! to venture on almost boundless excursions through space, and as profound searchings into the past! to appropriate the treasures of life, and turn the currents of nature's forces into his own channels! to rise from the dust of earth to the throne of power, and say to nature, "Go:"—and it goeth! Surely there was a declaration of man's dignity we can not yet apprehend in those words, "SUBDUE IT."

But what is this subduing of the earth? How is nature brought under subjection? Man's highest glory consists in obedience to the Eternal Will; and in this case, is he actually taking the reins into his own hands? Far from it. He is but yielding submission. He is learning that will, and placing himself, as Lord Bacon has said, in direct subserviency to divine laws. When he sets his sails, and drives over the waves before the blast, feeling the pride of power in that the gale has been broken into a willing steed, he still looks up reverently, and acknowledges that God in nature has been his teacher, and is his strength. When he strikes the rock, and out flows the brilliant metal, he admits that it is in obedience to a higher will than his own, and a reward of careful searching for truth, in complete subjection to that will. When he yokes together a plate of copper and zinc, and urges them to action by a cup of acid—and then despatches burdens of thought on errands of thousands of miles, man may indeed claim that he has nature at his bid, subdued, a willing messenger; and yet it is so, because man himself acts in perfect obedience to law. He may well feel exalted: but his exaltation proceeds from the fact that he has drawn from a higher source of strength than himself, and a mind not morally perverted, will give the glory where it is due.

These are the rewards of an humble and teachable spirit, kneeling at the shrine of nature: and if there is indeed that forgetfulness of self, and unalloyed love of truth which alone can ensure the highest success in research, this shrine will be viewed as only the portal to a holier temple, where God reigns in his purity and love.

The command, "subdue, and have dominion," is, then, both a mark of man's power, and of God's power. It requires man to study his Maker's works, that he may adapt himself to his laws, and use them to his advantage;—to become wise, that he may be strong;—to elevate and ennoble mind, that matter may take its true place of subjection. It involves not merely a study of nature in the ordinary sense of those words, but also a study of man himself, and the utmost exaltation of the moral and mental qualities; for man is a part of nature; and moreover, to understand the teachings of Infinite Wisdom, the largest expansion of intellect, and loftiest elevation of soul are requisite.

Leaving out of view the moral aspect of the question, let us look for a moment at the history of man's obedience to this injunction.

Solomon says, that in his day, "there was nothing new under the sun." What is, is what has been, and what shall be. The No. 6.—[VOL. II., No. 2.]—23

sentiment was not prompted by any modern scientific spirit,—impatience of so little progress; for it was immediately connected with sighings for the good *old* times. Much the same spirit is often shown in these days, and elaborate addresses are sometimes written to prove that after all our boasted progress, Egypt and Greece were the actual sources of existing knowledge. They point to the massy stones of the pyramids; the sublime temples and palaces of the old empires; the occasional utensils of half-transparent glass, and implements of bronze or iron found among their buried ruins; the fine fabrics and costly Tyrian dye;—they descant upon the wonderful perfection attained in the fine arts, in poetry and rhetoric, and the profound thought of the ancient philosophers:—and then are almost ready to echo, “There is nothing new under the sun.” What is, is what has been. *Those good old times!*

But what had those old philosophers, or the whole ancient world done toward bringing nature under subjection, in obedience to the command, “subdue it?”

They had, it is true, built magnificent temples. But the taste of the architect, and that of the statuary or poet, is simply an emanation from the divine breath within man, and is cultivated by contemplation, and only surface contact with nature.

They piled up Cyclopean rocks into walls and pyramids. But the use of the lever and pulley comes also from the workings of mind, and but shallow views of the world. And adding man to man till thousands work together as in one harness, has been a common feat of despots from the time of the Pharaohs onward.

They eduved profound systems of philosophy, showing a depth of thought since unsurpassed. But these again were the results of cogitating mind, acting in its own might,—glancing, it may be, at the landscape and the stars in admiration, but centering on man and mind; and often proving to be as erroneous as profound.

They cultivated the intellect, and made progress in political knowledge. But in their attempts to control nature, they brought to bear little beyond *mere physical force*.

Although ancient wisdom treats of air, earth, fire, and water, not one of these so-called elements was, in any proper sense, brought under subjection.

The *Air*:—Was it subdued, when the old Roman still preferred his banks of oars, and on the land, the wind was trained only to turn a windmill, carry off chaff, or work in a bellows?

Was the *Earth* subdued, when instead of being forced to pour

out in streams its wealth of various ores, but half a dozen metals were known? and instead of being explored and found to be marshalled for man's command, under sixty or more elements, each with its laws of combination and all bound to serve the arts, the wisest minds saw only a mess of earth, something to tread upon, and grow grain and grass?

Was *Fire* subdued, when almost its only uses were to warm, and cook, and to bake clay, and few of its other powers were known, besides those of destruction? or *Light*, when not even its component colors were recognized, and it served simply as a means of sight, in which man shared its use with brutes?

Was *Water* subdued, when it was left to run wild along the water-courses, and its ocean-waves were a terror to all the sailors of the age? when steam was only the ephemeral vapor of a boiling kettle, yet unknown in its might, and unharnessed? when the clouds sent their shafts where they willed? when the constituents of water,—the life-element *oxygen*, and the inflammable *hydrogen*, had not yet yielded themselves to man as his vassals?

Hardly the initial step had been taken, through the thousands of years of the earth's existence, to acquire that control of nature which mind should have, and God had ordered. The sciences of observation and experiment had not emerged from the mists of empiricism and superstition. There were few ascertained principles beyond those that flow from mathematical law, or from cogitations of mind after surface surveys of the world.

No wonder that nature unsubdued should have proved herself a tyrant. She *is* powerful. Vast might is embodied in her forces, that may well strike terror into the uninstructed: and man has shown his greatness in that he has at last dared to claim obedience. The air, earth, water, fire, had become filled with fancied fiends, which any priest or priestess could evoke; and even the harmless moon, or two approaching or receding planets, or the accidental flight of a thoughtless bird, caused fearful forebodings; and a long-tailed comet made the whole world to shake with terror.

Christianity, although radiant with hope, could not wholly break the spell. The Christian's trust, Heaven's best gift to man, makes the soul calm and strong mid dangers, real or unreal; yet it leaves the sources of terror in nature untouched, to be assailed by that power which comes from knowledge.

Man thus suffered for his disobedience. He was the slave,—nature, the feared master, to many even the evil demon himself.

Is this now true of nature? We know that to a large extent, nature is yet unsearched and unsubdued. Still, vast progress has been made toward gaining control of her ten thousand agencies.

In gathering this knowledge, we have not sought for it among the faded monuments and rolls of the *ancients*, as we call the inhabitants of the earth's childhood; but have looked to records of vaster antiquity—the writings of the infinite God in creation, which are now as fresh with beauty and wisdom as when His finger first mapped out the heavens, or traced the flowers and crystals of the earth. This is the fountain whence we have drawn: and what is the result?

How is it with *water* in these last times? Instead of wasting its powers in gambols down valleys, or in sluggish quiet about "sleepy hollows," it is trained to toil. With as much glee as it ever displayed running and leaping in its free channel, a single stream now turns over a million of spindles in this New England.

Changed to steam, there is terror in its strength even now. Yet the laws of steam, of its production, condensation, and elasticity, have been so carefully studied, and also the strength and other qualities of the metal used to confine it, as well as the nature and effects of fuel, that if we are careful not to defy established principles, steam is our most willing worker,—turning saw-mills, printing-presses, cotton-gins,—speeding over our roads with indefinite trains of carriages and freight,—bearing away floating mansions, against wind and tide, across the oceans,—cooking, heating, searching out dyes from coarse logwood, and the like,—and applying itself to useful purposes, one way or another, in almost all the arts. Again, if we will it, and follow nature's laws, water gives up its oxygen and hydrogen, and thus the chemist secures the means of burning even the diamond; the aeronaut makes wings for his adventurous flight, and the light-house derives the famous Drummond light for its work of mercy. And when he chooses, man may unite the oxygen and hydrogen again, and re-form the original water.

Light is no longer a mere colorless medium of sight. We may evoke from it any color we please, either for use or pleasure. We may also take its chemical rays from the rest, or its light rays, or its heat rays, and employ them separately or together; for we have found out where its strength lies in these particulars, so that, at will, light may pass from our manipulations, shorn of its heating power, or of its power of promoting growth or chemical change. Aye, the subtle agent will now use its pencil in taking sketches

from nature, or portraits, if we desire it:—and the work is well done.

The ancient wise men, discoursing on the power which holds matter together, sometimes attributed to the particles convenient hooks for clinging to one another. Little was it dreamed that the force of combination in matter,—now called attraction,—included the lightning among its effects, and would be made to run errands, and do hard work for man. Electricity, galvanism, magnetism, are modern names for some of the different moods under which this agent appears; and none of nature's powers now do better service. It is kept on constant run with messages over the continents, scaling mountains, or traversing seas, with equal facility. It does our gilding and silver-plating. Give it an engraved plate as a copy, and it will make a hundred such in a short time. If taken into employ, it will, in case of fire, set all the bells of a city ringing at once; or it will strike a common beat for all the clocks of a country; or be the astronomer's best and surest aid in observing phases in the heavens, or measuring longitude on the earth. All this and more it accomplishes for us, or can if we wish, besides opening to our inquiring eyes the profound philosophy which God has inscribed in his works.

Nature is no longer full of gloom and terror. Her fancied fiends have turned out friends. Although God still holds supreme control, and often makes man remember whence his strength, yet every agent, however mighty in itself, is becoming a gentle and ready assistant, both in our work and play,—in the material progress of nations, as well as their moral and intellectual advancement. Art is thence receiving daily contributions, and already realizes that no knowledge for service, compares with that which comes direct from nature.

It is apparent also, that only the most profound and scrutinizing research, with an earnest and docile spirit, can discover the unseen wealth of nature; for the great truths which have proved so fertile in results, have been sought out by those only who have given themselves, with all their might, to the deep study of God's laws in his works.

Thus it is that fact has been added to fact, until facts have become principles, and principles have expanded until they finally blossomed and spread their fragrance and fruit over the land, while the many receiving the blessing were ignorant whence it came.

A farther reference to the history of science will exhibit more

clearly the dependence of the arts on scientific progress; and I must ask your indulgence, if I refer to familiar facts for the sake of illustration.

Some knowledge of electricity, that is, the power evolved on rubbing glass, amber, resin, or sealing-wax, and other substances, was afloat in the ancient world. But until near fifty-six hundred years had passed, there was not an established principle even in prospect. A little more than a century since, the power was at last collected in quantities and imprisoned by means of the Leyden jar. Its shocks and sparks and other feats were among the wonders of science; but art had yet reaped nothing.

At this time, Franklin commenced experimenting on electricity; for the bruit of the Leyden jar had crossed the waters. He at once thought he saw miniature lightning in the sparks; and soon after, by means of his kite, as you well know, proved his induction right. After thus tapping the clouds for his experiments, he asked, Why not disarm the clouds, by planting perpetual conductors about our dwellings? It was done: and electricity shed its first fruits over the world.

Near forty years later, ten before the last century closed, a frog's leg freshly prepared for cooking, lying on a table in Galvani's house, on which was a charged electric battery, was observed to twitch convulsively when touched by a knife. Galvani took the hint, and after a series of experiments, thought he saw evidence of a new power in animal life, passing between the nerves and muscles. Volta soon disputed Galvani's theory of animal electricity, and set to work examining the conditions of the leg, its metallic connections and other circumstances. In pursuit of the simple truth, thinking that perhaps mere moisture might be an agent in the phenomenon, he placed a plate of silver on the back of a living frog, and another of zinc below, and on pressing gently, and bringing the plates into contact at one edge, the frog twitched all over, though no nerves were exposed. He next put the same metals together with only a moist piece of cloth or paper between, and, on connecting the two metals by a wire, observed at the moment of connection, an effect on an electrometer precisely like that caused by electricity. All that he required to produce the result, was a coin or disc of silver, (or copper,) a similar disk of zinc, and between the two, a disc of cloth, nearly as large, wet with salt water. He then added to the little triplet of silver, wet cloth and zinc, another triplet of silver, wet cloth and zinc, and another, and so on,

making a pile. With three or four such triplets in the pile, on touching one extremity of the series with a moistened finger of one hand, and the other extremity with a finger of the other hand, he felt a slight shock in his fingers, apparently of the same nature with that in the frog's leg: and as the pile increased in height, the shock increased; and moreover, he finally obtained a spark like that from the Leyden jar. It was light to the mind as well as eye. The movement of the frog was explained, while something very like electricity was evolved under extraordinary circumstances.

In this little pile—the voltaic pile, as it has been called—the first step was taken on a road leading deep into nature's arcana. Yet neither the world nor Volta then knew its future. Many, no doubt, were the contemptuous inquiries, "*cui bono?*" following a shrug at the shock felt at the finger-joints and elbows.

Others immediately after took up the line of investigation. The pile was changed into a trough containing a series of couplets of zinc and copper, alternating with narrow chambers filled with acid, in the order, zinc, moisture, copper, as used by Volta; and a brilliant series of developments commenced. The way had been prepared by the recent growth of the science of chemistry, which had made rapid progress since the discovery of oxygen, by Priestley, in 1774.

In experimenting with the battery, on bringing wires from the two ends into contact, intense heat as well as light was observed, melting or burning the wires:—*one new principle*, that this force will produce great heat.

Upon dipping the ends of these wires into a glass of water, bubbles of gas escaped from each, proved afterward to be the elements of water: hence, *another new principle*, that galvanism has the power of sundering the elements of a compound, or decomposing it. It was strange to most eyes, and nothing more; and to the question what is the use, there was little yet to show. Sir Humphrey Davy, pursuing this thought, obtained from potash, a metal afterward called *potassium*, that would float and burn on water; and from soda, another, *sodium*, almost as inflammable. But the quantities produced were very small, and there was nothing for the arts. It was observed, also, that on using in the battery the salt called sulphate of copper or blue vitriol, the metallic copper of the salt was abundantly deposited on the zinc, illustrating farther, this power in galvanism of decomposing compounds; but the fact was unproductive, except of inconvenience.

As years passed on and investigation continued, it was discovered that galvanism could make magnets out of any metal; that magnets could produce the effects of galvanism, give shocks and sparks, and decompose water; that electricity also could be made to decompose water, like galvanism. In fact, it became apparent that these three agencies were akin, and probably one in origin. But there was still heard the sneering "*cui bono*," which saw no good in studying truth for its own sake, and had no measure of its value but the moneyed return.

It is the glory of the arrangements in the physical world, that beauty and utility mostly go together. The former, is first and always reached, and is the boon to tempt the mind onward in research. By and by the practical comes forth in abundance, and then mind has its double reward. We have faith that the slow-growing tree, which for years is expanding in leafy beauty, will yet afford a rich return: at last the buds appear; then the flowers open out in their splendor; and finally, both beauty and utility oftentimes reach their climax together, in the ripened fruit, one heightening the effect of the other. Such should be our faith in the study of nature; for however dry the work of him who delves, nature has treasures in profusion to reward the labor.

About forty-five years after the twitching of Galvani's frog, the time of blossom and fruit came; and such a succession of benefits from nature never before descended on the globe in any one ten years.

In 1837, Professor Morse, one of our own number, was already setting up his telegraph, bringing into its construction the well-known principles of the electro-magnet and galvanic battery; and now telegraphic threads, along which thought travels with almost the speed of light, are enveloping a large part of the globe.

About the same time, the fact of the deposition of copper from a copper salt, became a productive principle. It was found that copper could thus be deposited over an engraved plate, and a perfect copy made of every line or dot. The happy thought soon developed into a new art—that of electrotyping. A single engraved plate could thus be indefinitely multiplied, and the original retained unhurt.

But the art was not confined to this purpose alone. Books, till then, had been stereotyped by making a plaster cast of a surface of a page set in type, and then taking casts of lead in the plaster. Now they take the first cast in wax, cover its surface with powdered

black lead, and carry it to the galvanic battery. Thence, it soon comes out, a cast of the page in copper, far more perfect than the old stereotypes, more expeditiously made, and more durable. The Bible House in New York, is now full of electrotypes; they scarcely print from any thing else. The fine wood-engravings, so profusely adorning some of the Tract House publications, and many of the illustrated works and magazines of the day, are printed from electrotypes alone. Thus the great art of book-making, and therefore the whole world of mind, and all that is sacred as well as secular, are reaping results from a science that germinated first in that queer little pile of Volta, which in the opinion of the economists of its time, was of no earthly use to any body.

But if type and engraved plates, and wood-cuts may be copied, why not copy other things in the same way? In fact, the process is used for the reproduction of works of art; and thus immense establishments now manufacture medals, bronze statues or statuettes, and bas-reliefs, in a style of great beauty and perfection, and at moderate cost.

Shortly after the first electrotypes were made, it was observed that the deposition of silver or gold, through galvanism, on copper, and some other metals, served as a convenient mode of plating; and to-day nearly all the silvering and gilding on metal required in the arts, is done by electro-plating. Minutes now stand for the hours of the old regime.

Some years ago, it was thought that if electro-magnetism could move the machinery of the telegraph, and mark down or print off the passing thought on paper, it would also register the beats of a pendulum. Or, if so willed, it would repeat the beats of any *one* clock all over the land, wherever it was sent along wires for the purpose. And already, in some cities, they are beginning to distribute and sell *time* as they do *gas*, one single time piece *timing* the town, as one *gas* establishment *lights* it. At Marseilles, they are, this very year, putting time-pieces, thus fed, into all the lamps of the lamp-posts along the public streets, which may be read at night as well as by day.

To our own country belongs the honor of this application of science. At this moment, the astronomical clock at Cambridge beats time in all the railroad depots at Boston; and but a few weeks since, the Dudley Observatory at Albany, proposed to supply the city of New York with time, the observatory drawing upon the stars for its supply.

The astronomer has other higher uses for the subtle agent, for he makes it his private secretary, requiring it to register on paper, the time of his observations, and help map off the heavens. If a strip of paper have a straight, uniform motion, and as it moves on, just touches the point of a stationary pen or pencil, a mark is made on the paper, which obviously would be twice as long for two seconds as for one; and so on. If then, for every second, a mark an inch long were made, every inch would represent a second. Thus seconds may actually be converted into feet, and time may be measured by the yard-stick; or with a delicate scale, a second may be subdivided into tenths and hundredths of a second. This simple and ingenious idea, the astronomer applies to his purposes by means of a clock and a telegraphic apparatus; and now instead of counting the ticks of his clock, he touches a key at the moment of a transit, or other event in the heavens; this makes a check on the paper, and so marks the precise time, even to a minute fraction of a second. The observations thus made, are not only vastly more accurate than those on the old plan, but may follow one another with incredible rapidity; so that in one night, more work can be done than before in a month.

This invention, the work mainly of American mind, by which electro-magnetism has become the astronomer's most faithful assistant, is now introduced into some of the best observatories of Europe.

The difference of longitude between points over this continent, and between Greenwich and the observatories of Europe, has been ascertained by the same means, and with like accuracy. This, too, was an American suggestion. And when the telegraph wires now in progress are laid across the Atlantic, the difference of longitude between Washington and Greenwich will be as exactly known. Who imagined fifty years since, that the galvanic fluid would help us measure distance on the earth, and that the geographer would have cause to bless the lightning as well as stars!

With equal facility, this agent has been adapted, as I have said, to the fire alarm bells of a city. Where employed, one man may strike every bell in the city, though miles apart, at the same instant; and a slight movement of the finger is all the power he exerts; at one tap, the ringing begins, and it continues without further effort. At the same time, too, instantaneous notice of the place of the fire may be sent to every engine house.

The same agent is playing errand-boy in hotels, displacing the

brazen-tongued messengers that were regularly kept on file in the office.

All these,—and many more results might be added,—are developments from that unseen force which Galvani and Volta were the first to recognize, after the world was almost *fifty-eight hundred years old!*

In this review of the useful in science, I have left wholly unnoticed the beautiful results of photography, and other uncounted gifts of chemistry to the arts, and the contributions also from the departments of light, heat, and natural history, that are variously enriching the world. But I must stop here, my illustrations, for want of time. I think I have abundantly shown that this modern age far transcends the ancient world, through its obedience to the injunction, *Subdue, and have dominion*; that man has thereby grown in wisdom and power; that progress in science is hence demanded as our bounden duty. Every principle of our being prompts to its study: our love of the beauty and grandeur of truth; our eagerness for startling developments or novelties; our ambition as a nation to rise in wealth and honor; our very avarice: all urge us to search out nature's laws. And those whom I have the honor to address will also appreciate the still nobler sentiment, that God is here making displays of his glory, and giving lessons to man on a subject loftier than art, even his own transcendent wisdom in the great plan of creation.

Science is an unfailing source of good. And as the laws of God are universal, even more so than air and water, so every new development is destined to bestow some universal blessing on mankind. Complain not, if the reward be long delayed. Man has not the prescience that entitles him to declare any truth in nature useless, however barren to present view. The tree and fruit come from the germ; and no one will denounce the seed because the blossoms are not yet visible.

If evil appears mixed with the good, let us remember that it is so mixed in the heart of man, and this is its only source. The face of nature is as pure as the atmosphere of heaven, and if, in our looking, we see aught that is bad, it is a graft from tainted humanity.

The working of self-reliant mind, not the study of nature, has been the prolific source of error in philosophy and religion. Proud man, trusting to himself, looking within for knowledge, and hoping by simple, unaided thought, to fathom the depths of nature as well

as mind, has reached one error after another; and thus pantheism and other false systems of belief have been engendered.

Mind, through its intuitive principles, and its capacity of cultivation and development, is made for the contemplation of God's works and word; and it is our exalted privilege thus to be pupils,—pupils of the infinite God, himself our teacher and our study. For his works and his word are two revelations of himself which he has adapted to our finite natures:—the *first*, a manifestation of God the Creator, displaying his wisdom, power and beneficence; the *second*, a manifestation of God the Supreme Ruler, exhibiting his holiness and love, and having its consummation in the advent of Christ, who is “God with us,” the light and life of the soul. In apprehending spiritual things, we thus are not left to ourselves; we even have besides this revelation, the aid of the ever-present Divine Spirit. And with regard to God's works, we search our own minds in vain for truth: but looking to the works themselves, we find wisdom welling up even at our feet. This wisdom is that we call *science*, the science of nature.

It is painful to witness the dread of this science that is so often displayed, when, as I have said, the real origin of mischief, as far as it is intellectual, is in that old method of philosophy which makes systems of nature out of baseless cogitations.

Geology, of all the sciences, has been most denounced for alleged infidelity: and yet it is the very one among them, that has come most valiantly and successfully to the combat against error. It is proving, what none other could prove, that God's hand, omnipotent and bearing a profusion of bounties, has again and again been outstretched over the earth; that no senseless development principle evolved the beasts of the field out of monads, and men out of monkeys, but that all can alike claim parentage in the Infinite Author; that the earth has been ordered through a long history, in its plant and animal life, its accumulating rocks and minerals, its rising mountains, shaping continents, and deepening seas, with reference to man, his whole intellectual and religious development. Ten-fold power beyond that from any other source, is thus given to the evidence of a moral and spiritual purpose in creation; and this established, we have the highest proof nature can afford of a personal God over creation.

Science should not be feared. Her progress is upward as well as onward, to clearer and clearer visions of infinite beneficence. Her platform is not a shifting one. She stands on truth, looking

wistfully to brighter realms above. And if, while in eager gaze, her conceptions respecting regions yet unreached are vague, or in any way erroneous, each step forward is to a higher level, where she may resolve what before was dimly seen. Thus she rises from truth to loftier truth, dispelling the error that may be mingled with her deductions. Press her forward, then, with all your might; for in her progress, the finite is taking proffered strength from the Infinite. It is cowardly, it is wrong to God and ourselves, to doubt.

The Atheism which has long possessed much of the intellectual philosophy of man, may and will strive to use the developments of science for its ends; and in this evil world, a blighting influence from such a source will long be felt. But the course of research is tending to ward off the evil, and make science what by divine appointment she must be, the faithful handmaid of sacred truth.

A pestilential cloud has recently passed over the country, which has marked its track every where with infidelity. It was not a natural emanation from God's works, but the same in origin with the vapors that shrouded the world in the ages of superstition, when mind was oppressed by its own imaginings. Scientific men have often been blamed for a want of interest in the phenomena. But it was mainly power drawn from nature by faithful research, that annihilated those spirits, black, white, and grizzled, of olden time; and surely there can be no less hostility to the breed now. The height of the pestilence has passed; and the best preventive of another return we can offer, is a strong infusion of inductive science.

We have reason for gratulation, that our country is beginning to appreciate the importance of scientific culture. A general movement in its favor, is in progress over the land. From the east to the far west, from the north to the south, there is a rising voice calling for this knowledge that makes nature our helpmeet in industrial pursuits, as well as our instructor in lofty truth. Universities are planned in various States: more than one has been projected in New York State alone, and in her great city, a magnificent temple consecrated to industrial science now stands nearly complete. Endowments are made to this and that institution, to meet the urgent want. Six years since, the half century closed, and a large part of the semi-centennial sermons then preached, were mainly on the triumphs of science in the fifty years just passed; and although not so recognized, it was in fact a scientific jubilee. It was followed soon by the Crystal Palace exhibition at London, and then

another in New York, and others since in Europe,—all tending to arouse the attention of the world to the true basis of national greatness, the harmonious blending, under the highest intellectual culture, of Art, Science, and Religion;—Science bestowing her profusion of gifts on genial and pliant Art, and at the same time offering her first fruits to Religion; while Religion is pointing both Science and Art upward to the source of all knowledge, and guiding them in the way of truth and righteousness.

But while the necessity of instruction in nature-truth is appreciated throughout the land, it is not clear to all, what is the best mode of supplying the need, or, in other words, what kind of schools of science and art, the country demands.

It is plain that they must be of various grades. There may be the trade school for the child, especially such children as are objects of charity. There should be other schools for youth frequenting our institutes, and for journeymen in all the various trades of the country; and then still higher schools, where teachers shall be taught, which shall be head fountains of knowledge supplying the land with its engineers, its architects, its agriculturists, its thoroughly grounded mechanics, as well as its chemists and proficients in theoretical science.

In most of the schemes for these higher institutions which are brought forward, there are two prominent errors demanding brief consideration.

First, what is thought to be needed is the practical mainly. None of your theories, they say, but the practical, unaware that the practical rests upon the true scientific as its basis, and that the two must go hand in hand, as they are one in their aim, and parts of the same system of truth.

But, *secondly*, where science seems to be appreciated, there is a tendency to be content with a meager allowance; or, with careful regard to economy to get out of one man the duty of half a dozen.

In a small village, wares of all sorts, and only a little of each, are necessarily gathered into a single shop. In striking contrast with this appear the multiplication of warehouses and profusion of each kind of product found in a large city. America has always been to Europe, as regards its means of scientific instruction, like the country to the city. But are we always to remain a country village along side of Europe? With twenty-eight millions of population may we not yet have city privileges?

Even little Saxony, with a population less than two millions—

about the size of Connecticut, Massachusetts, and Rhode Island,—has a Mining School with thirteen professors, delivering lectures on Physics, Chemistry, Mineralogy, Geology, Descriptive and Practical Geometry, Mining Machinery, Metallurgy, the Blowpipe, Assaying, Mining Jurisprudence, Drawing, and the French Language, while the greatest number of Professors that in the American mind was ever dreamed to be necessary in such an institution is two: a professor of mining, who should also be a geologist and a mineralogist, and a metallurgical professor. Indeed these two distinct branches many would think might be in the hands of one, although no mining company would trust its furnaces to the mining engineer, or the sinking of shafts to the reducer of ores.

But Saxony, although so limited in territory, has, besides this mining school, a University of one hundred and nine professors and instructors; also five schools of arts and design, with thirty instructors; and seventeen trade schools of the first grade, with ninety-three, in the country towns, of lower grades.

Saxony is a fair example of most European states. There is no counting of dollars as to the exact cost of educating boys per head, as if raising cattle, but a wise determination to have the best of educational institutions at any expense.

Russia, thought of by many as a land of semi-barbarism, has at St. Petersburg a school of mines with forty-three professors, which is furnished with splendid cabinets of minerals, ores, and models; and among the models, there are great subterranean rooms, showing the whole inner structure of mines, into which you may descend and examine the underground works.

There is also a school of forestry, having in view the culture of trees, which has its immense gardens or forests of both indigenous trees and species brought in from various parts of the world, besides cabinets of all kinds of woods; and it controls a corps of emissaries, which it dispatches over the land for the care of the trees of the empire.

In addition to these, there are seventy-five subordinate mining establishments with two hundred and forty teachers and near seven thousand scholars; also, an extensive central school of agriculture, with various subordinate establishments; also another central school of industrial mechanics, and chemistry; another of engineering; and so on.

There are certainly some things in which we are *not* ahead of the rest of the world. And shall we not look abroad and learn wisdom? It is well known that to meet the demands of the age,

and secure success, broad plans and large capital are required. So in educational institutions, like those of which we speak, two or three associated professors may do something: but a small school will only creep along, and may be crushed by ambitious rivals. We shall find, however, a different result, if the school expand to an efficient size:—if it become a place, where the agriculturist can obtain a complete agricultural education, from chemistry, geology and the nature of soils, to the practice of farming and the raising of animals; where the mechanic may learn all that pertains to the metals and other material in machinery, all the applications of chemistry he requires, the laws of motion, the methods of applying power, and whatever is novel or instructive in the most recent patents; where those following the chemical arts, shall be equally well supplied with a good foundation, and principles as exemplified in different branches of manufacture; where the architect and engineer shall find instruction on building material and cements, in the mathematics of arches, bridges and structures generally, in physics, the use of instruments, practical engineering and drawing, in the principles of taste and the history of works of this and past times; where, too, those who would pursue science for its own sake shall be aided in acquiring all that science can teach, that they may go yet deeper in research, and bring to light other facts and principles to increase the wisdom and strength of toiling man.

The theoretical and practical should go together and on a scale of magnitude sufficient to produce results of value. Let each one whose pursuits bear on the arts or sciences compute what his special department requires, and then let all the results be combined, the decision will assuredly be that we need for efficiency a great institution, something corresponding to the country in its extent and enterprise.

Why is it that France, without mines and with few resources, is yet one of the wealthiest nations of the world, and in advance of others in the quality of many of her manufactures. France knows that there is inexhaustible wealth in nature's laws, and encourages science among all grades in society. She has her many schools of science in which the practical and theoretical are conjoined, and all under thorough organization.

At Paris there is the great Central School (L'Ecole Centrale,) the Conservatory of Arts and Trades, the School of Engineering, the School of Mines, the Polytechnic School, besides the famous Garden of Plants, an institution with vast museums and

numerous instructors in all branches of science. Subordinate to these, there are schools for special departments distributed over the empire, meeting the wants of every particular manufacture in all its details.

The French government directs special attention to the art of design and improvement of artistic skill and taste among the people, having the wit to see that taste expended on iron or copper may multiply many fold its prime value, while mere labor adds but a small percentage. The nation encourages especially chemical investigation, and reaps one of its rewards in having dyes that claim universal admiration, throwing into bad repute our Merri-mack imitations; and having colors for porcelain, that also reproach us. These are two out of many examples that might be mentioned.

Prizes also are annually offered for new discoveries or investigations, and every incentive thrown out to scientific activity. From this encouragement of the arts and sciences proceeds very much of the strength and wealth of the French nation.

England saw the contrast to her disadvantage at the Crystal Palace exhibition in London, and has since organized the Department of Science and Art among the departments of the government, designed to carry out a system of scientific and polytechnic instruction over the land; and to this end £80,000 (\$400,000) were appropriated for the last year.

A moment's consideration will help us to comprehend the working of such a system of education. It is to be observed that the plan we contemplate, would include mathematics to its highest departments and through its various applications; the different branches of physics and chemistry; geology in its grandeur as a record of the past, and also its developments respecting mines, building materials and soils; astronomy; mineralogy, zoölogy, botany; the logic and philosophy of the inductive sciences; modern languages, and their connection and origin; geography in its relations to climate, history, commerce and the progress of nations; drawing and the history and criticism of art; all these, besides the practical arts and sciences in their diversity.

In the first place, then, the institution in view would open a wide range of university education to those who have not the requisite Latin and Greek to pursue the ordinary college course. The plan so blends the departments of knowledge taught, that the student, if he remains long enough to take the benefits offered, will come forth,

not shaped only for a single narrow channel of life, but with cultivated intellect and broad views of the world.

In the second place, it would make proficient in special departments fitted for stations of responsibility, men, who have acquired that wide range of principles and familiarity with their operations, which will render science a tool in the hand for farther progress. You now rarely find one among our common mechanics who knows the various qualities of the metals he is working with, or the laws of motion connected with machinery, or what is new or old, exploded or accepted, among inventions. And *one* consequence is, that the man, although of much general intelligence, is confined to his single thread, year after year: *another*, that his talents, if he have ingenuity, will often be wasted on worthless inventions, or efforts to work out what was long since known, or perhaps in laborious pursuit after that mechanical *ignis fatuus*, perpetual motion. Instead of starting with existing knowledge to work successfully to a higher level, he is groping in the darkness that was long since dispelled from the walks of true science and art.

There has recently been a "perpetual motion" machine in this region. The inventor knew the deception he was practising. But a large part of the mechanics that saw it were more than half satisfied that the great problem had been here solved, and incredulous science proved at fault. But should the secret be divulged, they would be surprised to find how they were deceived. All the arts afford similar illustrations of wasted means and misspent powers.

Again, such an institution would furnish men able to teach and spread sound knowledge around them, and so raise the standard of art education, besides protecting multitudes from follies and foolish expenditure.

Again, it would call into play the latent talent of thousands that now tread only in beaten paths, and open numberless channels of labor almost unoccupied. It would cultivate general taste, which is becoming more and more important in all our manufactures. It would tend to render the laws of nature universal in their benefits, by placing them at the command of the many over the land. With such results, the institution would assuredly become a chief source of national wealth and prosperity.

It is a striking fact, illustrating our poverty as an industrial people, that Mr. Goodyear, now in Paris, could not find the taste or artists here, able to design or make the articles which he required in the development of the india rubber manufacture.

There is, too, the still wider fact, that very many of the arts are pursued in this country only through artists imported from Europe.

We *should* have our own centers of strength and vitality; and this we aim to secure. With a plan of education of the kind explained fully carried out, the country may hope to take a stand on terms of equality with other civilized nations.

Here is a system of internal improvements that looks deeper than to the welfare of harbors and rivers. It strikes at the working mind of the nation. It takes its station above the common and high schools, to receive the youths there prepared with the elements of knowledge, and fit them for positions of honor and usefulness in the sciences, commerce, manufactures, agriculture, and other walks of life.

The results looked for, will not be the outflow of the University in itself alone. For such University schools produce, as a natural consequence, subordinate schools. The lower trade schools, where the details of each trade shall be taught, will multiply over the land in every town or county, as part of the fruits of the system. The university must first exist to afford the teachers for such schools. Once in full action, a flow of benefits will proceed from it that will cover the continent.

I have said that the age was calling for schools of science, and that many attempts are making through the land to meet the call.

The question with us is, shall this be the great seat of learning for the country? Shall the institution which took root with almost the first germs of civilization on the continent, and which has spread its branches widely, so as to be second to none in its compass and influence, still continue to expand with the expanding mind of the world? Or, shall we be content with the past, and see others imbibing the spirit of the age, and through the new vigor derived, rise beyond us, till like other shaded plants, Yale shall begin to dwindle, her laurels fade?

Ten years since, the Department of Philosophy and the Arts was projected (and the following year instituted,) by the Corporation of Yale College, to cover special instruction in general and practical science and the higher branches of literature. At that time, in 1846, the Yale School of Science, embracing chemistry applied to agriculture and the arts, was commenced, under Professor Benjamin Silliman, Jr., and Professor John Pitkin Norton, the latter, to our grief and great loss, since deceased. They worked

zealously, and for naught but the satisfaction of promoting the spread of scientific knowledge; for the income of the year never exceeded its expenditures. This school has continued its existence, and in it, many of the best young chemists of the land have taken their first steps in science. A professor of engineering has since been added; and already over 300 pupils have been here under instruction. As the school now stands, it has a professor of chemistry applied to the arts, a professor of agricultural chemistry, one of metallurgy, one of engineering, and through its connection with Yale College, one of geology, mineralogy, and general zoölogy; in other words, as is seen, one professor corresponds to a whole school of professors abroad. Moreover the school is without endowment. Still, there is here an organization, embracing nearly all that is required in theoretical science, with a part of the practical; and though incomplete, it has had a good measure of success.

The present organization only needs expansion, and adaptation to broader purposes; that is, a full corps of professors, so that the several sciences and arts shall all be subjects profoundly, and not one-sidedly taught; and it is important that there should be included that thorough instruction in the philosophy of geography, history, language, taste, and inductive reasoning, which will make the graduate an educated man, and an honor to the university. Several gentlemen of the College faculty, and others on the ground, are ready to coöperate toward this great end.

As the different departments contemplated in the plan are all embraced in one school, each does not require an independent corps of teachers; for a professor may instruct in half a dozen different sections, without much increased labor. A full organization, therefore, could be accomplished with only a moderate number of men, not much exceeding the corps of a school for a single department abroad.

The execution of the proposed plan, requires also a building, containing laboratories, lecture-rooms, and a museum of specimens and models; it needs, too, a farm for the agricultural department.

The museum, moreover, should be a spacious one, containing collections connected with all the subjects taught in the school: specimens in natural history; seeds, soils, implements and plans for the section of agriculture; models of bridges, arches, buildings, roads, aqueducts, samples of materials for construction, and a cabinet of physical apparatus, for the sections of engineering and architecture; collections of machines, models of new inventions, involving important principles, and collections of materials and im-

plements for the section of industrial mechanics, collections of art-products in all their stages of perfection, and their many varieties; collections of ores, and metallurgical products, models of mines and furnaces for the department of mining and metallurgy. In fact, the museum should lecture to the eye, and thoroughly in all the sections represented, so that no one could walk through the halls without profit. It should be a place where the public passing in and out, should gather something of the spirit, and much of the knowledge, of the institution.

Already, through the liberality of one of the citizens of New Haven, a fine lot has been set apart conditionally for the school,—one more beautiful or more convenient could not be found in or about the city. The condition is simply that of occupation and our having the means of success. No city in the land is a more favorable place for such an institution. The presence of the College, her large libraries and mineral collections, her professors and means of instruction, give it a vast advantage, being a portion of the capital of the school greater than we can estimate.

There is another need, which has not been alluded to, as it requires its own liberal foundation. I refer to an astronomical observatory. Yale, to this time, has none. The temporary arrangement on College grounds, where the Clarke telescope stands, merits many honorable words for directing early attention to this subject, and for its able contributions to astronomical science. But it is not an observatory, and has not been so regarded; and one fine instrument, the gift to the College of William Hillhouse, Esq., of this city, is stored away for want of a place to mount it, while an astronomical clock, from the same generous donor, is wasting time in the Library. May Yale, which had an early start in this department, be unsurpassed in her equipments, whenever the time for action comes. The regions of space to their farthest penetrable limits, will then be within her range of vision and study.

The department of philosophy and the arts, here instituted to embrace these various subjects, stands on the same independent basis with that of theology, law or medicine. While each is alike independent of the College proper, or academic department, one mantle covers all, and the same seal and the same honored name are affixed to all the diplomas.

My remarks thus far have had special reference to scientific courses of study, since these are less generally understood, and are more neglected among us, than those of any other branch of education. But the plan does not stop here: only a little wider expan-

sion of the scheme,—such as is contemplated, in fact,—and it will cover the highest branches of literary as well as scientific education, adapted to carry forward the graduate of the College, through a full university system of classical or other studies. Let there be a one or two years course of lectures and instruction arranged, which shall include general history, philology, ethnology, belles lettres, the history of philosophy, and other intellectual studies, and the number of resident graduates would greatly increase, and a new era dawn upon American learning. Not till this is accomplished, will the department of philosophy and the arts projected, become a realized fact. Not till then, can we hope to prevent our youth from seeking in the atmosphere of Germany the knowledge for which they yearn. The tide in that direction is on the constant increase. In one year, out of a dozen students in the Yale scientific school, half of them left for Europe; and the walks of literature illustrate the same fact. It is surely time for earnest and determined action.

GENTLEMEN OF THE ALUMNI:—

The plan is before you. It bears its own evidence that in the will of her men and the breadth of her aims, Yale is determined to be up to the times. The desire is manifest that the College, as it now stands, shall not longer mark the limit of American training in literature or science, but that higher paths be laid out, and broader fields surveyed and occupied.

Notwithstanding the clouds about our political horizon, we believe that America, free America, is to be the hope of the world; that she will yet take the lead among the nations, in population, wealth, education, benevolence, and all that adorns humanity. And in this growing nation, we see our revered Alma Mater, great also,—unexcelled; in the number of her students, beyond every other; in active interest in the welfare of her youths—but we would not boast. The first university in the leading nation of the globe,—dare we hope it? Why not let it so be? Why not have here, in this land of genial influences, beneath these noble elms, that seem like a realization of the classic shades of Greece,—but where a higher philosophy than that of Socrates, the philosophy that centers in Christ our chiefest glory, is the pervading spirit,—why not have here, THE AMERICAN UNIVERSITY,—where nature's laws shall be taught in all their fullness, and intellectual culture reach its highest limit! The affluence of nature should be our model: and if so, the greater the glory to this seat of learning, and the vaster the blessing to our country and the world.

VIII. THE EDUCATION REQUIRED BY THE TIMES.

BY RT. REV. THOMAS M. CLARK, D.D.

[An Address delivered before the American Institute of Instruction, at Springfield, Mass., on the 21st of August, 1856.]

I HAVE the honor to address the members of that profession, which, above any other vocation, must form the mind of the nation, and thus control its destiny. It is impossible to unduly magnify your office: every day it is becoming more and more important. Upon the faithfulness and ability with which you discharge its solemn functions, depends the successful issue of those great social problems which are committed to the American people for a practical solution; and if it shall be the fate of what have been technically called the learned professions to lose their relative influence in society, it will be because you have educated the popular mind up to their level; and then, of course, your profession takes the ascendancy.

At such a time as this, it becomes you to cherish a sound and wholesome enthusiasm in respect of that great work to which you have devoted yourselves. Above most other employments, it is a work which needs this stimulus. In some departments of life, men may work simply for wages, and still do their work well. Not so with you. Considering the solid amount of labor that is required of you, and the immense importance of your work—so far as money is concerned—you are more poorly paid than any class of persons in Christendom. If gold and silver are what you want, you will do far better to study French cookery for a month, and then practice as *artists* in the matter of bodily, rather than mental feeding. But it is to be presumed that you are actuated by higher motives. It is not easy to conceive how you can engage in so arduous and responsible a business as that which you have chosen, without a natural love of the profession. And this very taste is, in itself, of an elevated and unselfish character—the best possible assurance of faithfulness and success in your work.

The thought of universal education is comparatively modern. Among our ancestors, it was never dreamed of that the stores of

knowledge were intended to be thrown open to all mankind : a few of Heaven's favorites might be allowed to read and write, and exercise their mental faculties within certain defined limits ; while the rest of mankind toughened their muscles by physical labor, or relaxed their weary frame in animal enjoyments.

And there are men among us who are still haunted with the fear that we are carrying this matter of education too far, and who think it a somewhat perilous experiment to train all classes of men to think and investigate. There may be somewhat of a selfish pride connected with this fear. Those who have a funded interest in any great monopoly, are generally rather shy of ambitious rivals. But the great question is, whether it is better for the community to have a few learned men to give direction to public sentiment, with a great substratum of brute and stolid ignorance, or to let in light and warmth upon that dead material, and thus quicken it into fruitfulness and life.

In that favored portion of the globe where our lot is cast, this point has fortunately been determined already, and is now beyond reach of re-consideration. And yet, we labor under a gross delusion if we imagine that the standard of general education has reached its proper elevation. The time will come when the quality and quantity of education now given to the mass of our children, will be looked back upon as very crude and imperfect. It is supreme folly to suppose that we have nothing to do but just to perpetuate and keep alive the style of education which satisfied our forefathers. In the process of reform, we may expect that occasional failures will be made : as a man, in perfecting a machine, will fall into many errors, and be obliged from time to time to cast aside portions of his machinery as useless and unserviceable. But this fact should not discourage us ; we learn wisdom by our blunders.

At the basis of all progress in our system of common-school education there must lie a more general interest on the part of our citizens in this subject, and a more profound conviction of its intimate relation to the whole welfare of the country ; an interest and a conviction that shall be *practically* manifested by pecuniary appropriations far more liberal than have heretofore been made. It will be impossible long to retain the talent and intelligence which are needed to elevate our schools to their proper condition, at the rate of compensation which is now paid to teachers ; and the very highest order of ability ought to be found among the educators of the

nation. It should be made for the interest of men carefully to train themselves for this special vocation, with the direct view of making it the business of their lives.

If appropriations which are made to public education were increased four-fold it would be in the end a positive saving to the community. I will take two villages, with the same amount of population and similar resources of wealth. In the one we find a substantial and tasteful edifice, with trees shading its ornamented porch, attractive to the eye and suggestive of pleasant associations; made comfortable and cheerful within; furnished with the needed apparatus to illustrate and enliven study; and all under the direction of an intelligent, well-educated teacher, who is so liberally paid that he can afford to become permanent, and identify himself with the interests of the community in which he discharges his important functions. In the other village there stands an unpainted, dreary, rickety old structure, placed where it is hottest in summer and coldest in winter; the interior as repulsive as a jail-cell; the walls begrimed with the smoke and smut of many generations; the ridged floor undulating as you walk over it, and the narrow benches requiring a constant effort for the children to retain their seats; the school-books such as have been handed down from a former day, with the inky imprint on the covers and the uncouth pictures on the leaf testifying to the children of their fathers' skill and indolence; and the whole concern presided over by a rotation of teachers, kept on starvation wages, the lowest bidder being considered the best instructor.

Now look at these two villages after the lapse of a few generations, and see how much poorer the former has become through its liberal expenditure in education; and how much has been gained by the parsimony of the latter. Intelligence and virtue have filled the one with wealth and comfort; ignorance and vice have reduced the other to poverty and wretchedness.

In a republic like ours, every dollar judiciously expended upon education is a dollar saved. Far in advance of most countries as we are, as it respects this great subject, we are still stammering through our alphabet. More especially in our smaller towns, and in our rural districts, the progress we are making in general education is very slow—in some regions almost imperceptible; and I know of no way in which the people at large can be aroused to a proper sense of their duty to the rising generation, and the obligation which they are under to provide for their children a style of education in advance

of their own, unless it be by the patient efforts of teachers themselves. Let them thoroughly understand just what is needed; let them feel in their hearts the tremendous interests that are at stake; let them become fired with sacred enthusiasm, and they may enkindle light in regions which are now sitting in darkness. It is hard work to be called upon to teach not only the children, but the fathers; to go round from house to house and break up the crust of prejudice; and oppose the suggestions of avarice, and listen patiently to the croakings of stupid ignorance; and lead the father to provide for his child a benefit, the value of which he himself is incompetent to appreciate. If this be too much to ask of them, they can at least endeavor to elevate the standard of education with such material as they find provided for them, trusting to the impression which may be thus produced upon the community as the means of liberalizing their opinions and exciting their interest. The child himself may become the instrument of leading his father on to higher views of the value of knowledge. He may carry home from the school-room an enlightening and invigorating influence which will break the dull torpor of the domestic circle, and awaken there a spirit of inquiry which shall gradually react upon the school-room itself, and lead to more ample provision for its necessities.

But it is time for me to speak of that which I intended to make the chief topic of remark this evening; I wish now to direct your attention to a few particulars, in respect of which it is important that we should seek to improve upon the past.

1. And, first, we must learn to appreciate, more and more distinctly, the *physical* conditions of a sound education. It is to be considered that, in dealing with the child, we have to do with a material organism, and it is of prime importance that the machine should be in good working order. There is no subject, at all commensurate in importance, which has been so much neglected, in the training of the young, as physiology. Among what are called "good people," the subject itself is regarded with a degree of aversion, as savoring of materialism, and as irreligious in its tendency: its principles are not altogether consistent with the doctrine, that if the heart can be set right, the brain may be left to itself, and that, upon the whole, a diseased body is rather conducive to spiritual health. It is the same sort of blind prejudice that originally resisted the introduction of lightning-rods, and the insurance of property, and vaccination, and efforts for the cure of insanity, as an unwar-

rantable interference with the dispensations of Providence. But let any person recall the experiences of his own childhood and youth, and say, whether, if he had been trained upon sound physiological principles, he would not have been intellectually and morally advanced far beyond his present point of culture. Are not the indolence, the inertia, the want of mental concentration, laxity of memory, restiveness under discipline, weariness of study, as well as numberless *moral* evils, traceable to physical causes, which are, to some extent, capable of remedy? Why is it that, sometimes in a single hour, that task is easily and cheerfully accomplished, over which the child had before been hopelessly groaning for a whole day? Why is it that the school-room, at certain periods, seems to be pervaded with the malaria of inattention and disorder—every eye roving listlessly, mouths yawning, legs and arms moving convulsively, the teacher himself catching the infection, and beginning to feel his vocation the most dreary and hopeless and unthankful of all mortal avocations, and longing for the hour to come when he may dismiss the school, and breathe the free air again? It is precisely the same reason which makes the polar bear droop in a hot, stifled menagerie. The difficulty is atmospheric; and that instinctive desire of the teacher for freedom, ought to suggest the remedy.

Within the last thirty years there has been great improvement in the outward arrangements of education, in the construction of school-houses, in their furniture and fixtures, in warming and ventilation; there is also more of variety in the exercises of the school, and, I believe, some abbreviation in the time devoted to study. Remembering the sad experiences of the school-room thirty years ago, I am satisfied of the need of such improvement. Let us revive some of those early reminiscences.

It is a winter morning, and the thermometer stands somewhere in the neighborhood of zero. Clambering toilfully through the drifted snow, with aching feet and tingling face—for those were days when overshoes and fur-caps for boys were unknown—we arrive at the school-room somewhat before the hour, in order to be certain to be punctual; and there, in the little entry, some ten feet square, crowded together like bees, we wait the advent of “the Master;” for it is not thought safe to give us the range of the school-room in his absence. As the clock strikes nine, he arrives, and we enter. Half an hour before, the boy, whose turn it is to make the fire, has crowded the six-plate stove, which stands in the centre, with a ple-

thoric quantity of unseasoned wood, which in some remote corner is beginning slowly to ignite, and the smoke is oozing from the crevices, mocking the senses with the smell of fire, that has thus far affected the atmosphere in no other way. In process of time, however, we begin to see the red spot on the iron, which betokens approaching relief, the smoke somehow becomes gradually absorbed, and distant objects are visible again. The grateful moment at length comes, when we are allowed in squads to thaw ourselves by drawing around the iron altar, and extract the frost from our slates, which were very often stratified by the operation. Having in a few moments become as red as lobsters by close proximity to the red-hot stove, we are sent back to our seats to commence in earnest the labors of the day. There is something truly grateful in the warm slate, which before this was so cold that the moist hand clave to its icy surface, and with joyous hearts we address ourselves to solve the arithmetical mysteries of Daboll. But as the morning wears away, and the thermometer has mounted from freezing to summer heat, or would have done so if there had been such an instrument in the room, and we have continued hour by hour to breathe over the same atmosphere, until all its vitality is gone, a strange lassitude comes over us, and the suma, which we began so vigorously, somehow will not come out right, and the mind wanders off, from calculating the profits of a cargo of molasses, to dreaming in a sort of waking vision how pleasant it would be to have our school-days over, and to go to sea, and travel in strange countries, and visit Bagdad, which we imagine must be to this day a great centre of commerce; and while we are in all the glow of oriental splendor, and shaking hands with Muftis, and hearing the tinkling of camels' bells, and listening to the Muezzin's call, the vision is suddenly broken by another call to "come up and recite." It is like being awaked out of a sweet sleep, and told to get up and be hanged. The fact is, we were, to use a modern phrase, psychologized by the narcotic influence of a deoxygenized atmosphere, and were no more competent to study or to recite, than we would be to solve a logical problem under the effects of chloroform. The ten-minutes' recess, in the middle of the forenoon, was indeed a blessing, or would have been, if there had been any suitable place for winter recreation; but, as we should be frozen out of doors, and there was no great inducement to remain in the unventilated school-room, the only resource was the cellar, which, with all its cobwebs, and chips, and dust,

and gloom, was better than nothing. In the afternoon, except that the studies might be a little lighter, and relieved by a few declamations from that storehouse of eloquence, the Columbian Orator, the atmospheric difficulties made the case still worse. It is true that we escaped the primary freezing process, unless by accident the fire went out, when the frost-king resumed his sway almost instantly. What painful efforts have we made, under such circumstances, to grapple with our lesson, and find some crevice for it in our mind! And how the letters on the page would seem to swim, and one sentence run into another, and the definitions in the grammar look like a jargon of words—which indeed they sometimes were—and then how pleasant we thought it would be to go to church on Sunday, and hear the minister preach a sermon, with some of his most startling words put into it, from the text, “Much study is a weariness to the flesh!”

In the summer season the case was not much better, for then we had our eight or nine hours in school, instead of six, besides the hard lesson to be learned between schools. This, too, was the time when we were to be crammed for the annual fall-examination, a process conducted very much upon the same principle that cattle are fattened for the market: the object being, not to make them serviceable for future labor, but to look well at the sale.

Now I believe that if, instead of forcing the child to spend so many long hours in the school-room, at a season of the year when nature calls us to be out of doors, listening to her music and studying her beauties, he were told that, on the condition that he will complete his allotted tasks in half the time, he may then go forth into the green woods, or wherever else his feelings lead him, those tasks would be more thoroughly mastered, and his whole physical and mental being left in a better and healthier condition.

There are other particulars bearing upon this portion of my subject, of which I should be glad to speak, but there are so many topics, which I desire to notice, that I must be content with merely throwing out a hint or two upon each as I pass, leaving it with you to complete the outline.

2. The second point of which I would speak, is the importance of carefully distinguishing and recognizing the *peculiarities of individual temperament*, in our modes of education. In large schools, where it is necessary that there should be great method, and a uniform routine of discipline and study, there is considerable difficulty

in the practical application of this principle. In seeking to deal out equal justice to all, there may be injustice done to some. There is, among the pupils, every variety of capacity and of susceptibility, and yet one law must govern the whole. But the blow that is needed to bring out the faintest sound from one instrument, would shatter another, of a more delicate texture, in pieces. If, however, the teacher have in himself a true sense of the sacredness of childhood, he will instinctively conform his treatment to the idiosyncrasy of his pupil. He will be careful not to handle with roughness the frail vessel, which one rude touch may shiver. There is an agony, sometimes endured by the child endowed with a refined susceptibility, which deserves our profoundest pity, under a discipline that his rougher companion would only laugh at.

I do not mean that the teacher's discriminating attention should be expended only upon such as are likely best to reward his efforts: so far from this, special pains ought to be taken with those who need it most, whether it be because of the refinement or the *defects* of their natural organization. I can recall more than one of the companions of my boyhood who, by judicious and discriminative treatment, might have been trained to become useful members of society; but, inasmuch as they were conspicuous for certain repulsive and disagreeable traits of character, joined with a kind of dogged dulness, they seemed from the very first to be given over as predestined fools and hopeless reprobates. Now let a child once understand that this is his accredited reputation, and he is very certain to make it good; only take it for granted in your dealings with such a boy, or with almost any other sort of boy, that you expect him to lie, that you would be surprised to hear him tell the truth, and he will soon learn to lie fast enough. Meet him uniformly with a frown of displeasure, and he will meet you with the scowl of hatred; show him that you have no faith in his sincerity, and he will lose all faith in you. How many an honest though feeble effort to reform has been effectually checked for want of a word of kind encouragement! There is some chord in every child's heart which can be made to vibrate under the touch of sympathy. If we will only be at the pains to find out where that chord lies, we may be able to draw from it a soft note which shall gradually overpower the harsh discords of the soul, and bring the whole nature into harmony. To save a soul from death, and society from the blight of a corrupt example, is certainly worth a vigorous effort.

One of the most important lessons for a teacher of youth to learn is to make due allowance for natural infelicities of temperament and a defective organization. It should be remembered that no being is responsible for his nature, and that it requires a far greater struggle for some to do right than it does for others. It is hard for a child to be given over to neglect and contempt because he was so unfortunate as to come into the world with a misshapen organization. He certainly could not help it, and therefore he would seem to be rather an object of pity than of censure. It is, to be sure, not so agreeable to expend our labor upon a gnarled and knotted block, which it seems almost impossible ever to shape into decent symmetry, as it is to carve the soft and smooth-grained wood into forms of grace and beauty; but then, let it be remembered that the toughest timber is, for certain purposes, the most valuable, if it can be only hewed into shape. The sturdiest men are often such as have become so by vigorous resistance of evil tendencies; they have been made strong through bloody battles with the demon within them.

I think that, in dealing with children, we should assume that every human being is good for something, and is reclaimable, however bad the material may appear to be, if he is only taken in hand early enough. When we see what has been done for the intellectual elevation of idiots; how, by patient and philosophical culture, the minutest germ of thought has been so developed, that the child who would once have been considered as beneath the companionship of a respectable dog, becomes actually useful to society, we ought not to despair of reformation in the case of the most depraved. If the same sound philosophy were brought to bear upon the moral culture of the race, the results would be not less astonishing and cheering.

3. Passing now to the more direct consideration of education, as a process of *intellectual* discipline, I would remark, in general, that it is somewhat difficult to reconcile a becoming reverence for the usages and opinions of the past with the strong conviction that a positive and radical improvement is needed in our modes of teaching.

Certain great questions here suggest themselves (which I suppose it to be one design of your Conventions to consider), which demand the most serious and thoughtful discussion. The narrow limits to which I am confined will allow me simply to allude to some of these topics, with the addition of a few general observations.

(1.) And, first, is it desirable, as far as it can be done, to render all branches of study attractive; to carpet the pathway of knowledge with flowers, and make the landscape fair and beautiful? Is it well that our text-books should be enlivened with pleasing illustrations, with pictures, diagrams, and anecdotes, to attract the eye, and aid the memory, and enkindle the imagination? Or, does the proper discipline of the child require that he should be led along a dry and dusty road, and be forced to clamber over ragged rocks, and painfully climb to the heights of knowledge?

On the one hand, it may be said that inasmuch as it is the great object of education to discipline the mind and strengthen the intellectual faculties, and inasmuch as this can be done only by *tasking* the powers and toughening them by stern exercise, any thing which tends to lighten the toil is just so much lost: it relaxes the muscles instead of hardening them. Work and play are essentially distinct, and should be kept separate.

There is much truth in this; but, if the devices adopted to relieve the tedium of study are such as excite the mind to spontaneous and real activity, instead of providing something else as a substitute for labor; if the benefit of mental exercise may be had without the pain; and if the study which interests the child, and which he pursues with a relish, is that which does him the most good, disciplines him most thoroughly, and fixes itself most permanently in his memory, I see no reason why we should not endeavor to make every department of education as attractive as its nature will admit. I have no idea that it is desirable or possible to convert all study into an amusement; but it is well that every subject should be rendered intelligible to the pupil; that the definitions which he is called to learn should be given in language which conveys some meaning to his mind, instead of making the obscure still darker than before; that the modes of thought which are peculiar to childhood should be regarded in the presentation of principles and truths, and the imagination, which is the faculty that is first developed, should be used in every possible way to stimulate the memory and give life and reality to the abstract. Now I would ask whether the rules in our old-fashioned arithmetics and grammars were generally so expressed that, without other help, the child could attain an intelligible idea of the process or the thing they were intended to illustrate? Take one of the simplest—the definition of a verb, as “a word signifying to be, to do, or to suffer”—what idea did that

convey to our minds, except the vague thought of *suffering* as somehow pertaining to a process which we would have been glad to "decline" in some other than the grammatical way? Who of us ever worked out our sums upon the basis of the terms given in the rule? Until within a few years, the philosophy of arithmetic was a thing unknown in schools; we used to commit the rule to memory, and then work out the examples mechanically upon the basis of the formula which followed it; the principle involved, if we detected it at all, was an inference drawn by our own minds from the examples, and not from the rules. It is, indeed, sometimes necessary to charge the memory with words, which, for a time, must remain unintelligible; but sentences which carry a meaning with them are so much more easily retained, and act upon the mind with so much more of vigor, that it is desirable, whenever it can be done, to brush away the fog and lead the child along the road of knowledge in clear daylight.

(2.) And this suggests another important consideration. Have we not given, in our former modes of education, undue prominence to the cultivation of an arbitrary memory? By this I mean the ability to repeat a string of names, or dates, or words, which are to be recalled by no law of natural association, but simply because they have been, one by one, indented into the mind by interminable repetition. It would be a very useless accomplishment to be able to recite the names of all the kings and queens of England, with no other knowledge of English history; but if these names are so linked to the events of their respective periods, that they are naturally recalled by any allusion to those events, it is then an acquisition not likely to be lost, and of real service. Nearly all the *verbal* knowledge that we acquire at school is soon forgotten, unless it be attached in a natural way to some general outline or system of truth which we carry over with us into actual life, and there find to be of real profit. The time was, for instance, when we could repeat like a green parrot, our young heart swelling with the grandeur of the achievement, the name of every town in every county of our native State; but, it not being our business to collect the returns of votes from the interior, or to take the State census, or to call the roll in the legislature, the acquisition has proved to be of no special use, and so the mind quickly clears itself of the lumber.

Geography, or any other study taught in this artificial way, is very soon forgotten, and it disciplines but one faculty while we are

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learning it; but let the name be associated with a thought or a fact, and it daguerreotypes itself upon the mind. Any child can tell you the name of the island where Napoleon died, or of the regions where oranges grow; but the names of places that have no history, and which produce nothing that children are fond of, soon fade from the memory.

And may it not be that the faculty of memory is most effectually cultivated when it is not made the prominent and direct object of education? We remember best that which interests us most, because we give it our closest attention; whatever study, then, is made attractive to the child, he will remember without a conscious effort.

(3.) Another general observation here suggests itself. Our popular education needs to be made more practical, by which I mean that the pupils should be more generally taught how the knowledge which they acquire at school is *to be used* in after life. Many children have the impression that education pertains exclusively to early life and the school-room; that when the hour of their emancipation from this thralldom comes, that is the end of the whole matter—dictionaries, and grammars, and geographies may then be given to the flames. There is a current phrase which tells the whole story: we often hear of youth who have received a "*finished* education."

Now it would aid very much in giving the child an idea of the real and permanent value of what he learns, if, all along the course of study, he were shown its actual bearing upon the emergencies of his future life, and thus made to feel that, at school, he is only laying the foundation of a superstructure to be erected hereafter. Show him that, whatever vocation he may follow, every branch of study which he pursues at school will be *to* him of some practical service. "What is the use of this hard study?" the boy often murmurs woefully to himself, as, with squared elbows and drooping eyelid, he bends listlessly over his task, and wonders at the cruelty of the man who wrote the awful book which he is doomed to study. You may tell him that he ought to love learning for its own sake, that it is his duty to study whether he can see the use of it or not, and that, finally, if he does not study, he shall be flogged. This last argument he can appreciate, and to save his shoulders he is willing to task his brain; but the effort is not as wholesome as it might be if he were stimulated to labor by some nobler consideration.

(4.) In the next place, I would remark, that there is among us a too general want of thoroughness in teaching the rudiments of

knowledge, the primary principles of science. There is a national tendency *to get on*, or as it is popularly termed, "to go ahead," which infects our schools as well as every thing else, very much to the detriment of all solid acquisition. Children will talk to you of oxides, and latent forces, and synecdoches, and the Gallic war, and Anglo-Saxon idiosyncrasies, and geological stratifications, and Hindoo cosmogonies, till your head aches, when they would spell character with a *k*, and locate the Black Sea in Japan.

Now if the pupil really desires to learn, I can conceive of nothing more dispiriting than for him to find himself hopelessly trying to grapple with the advanced principles of a science, the rudiments of which he has never mastered. I think that some of us can here speak out of a bitter experience. I well remember those dismal hours, when, thirteen summers of life hardly completed, the brain reeled over fifty lines of Homer, allotted as the daily task, while the grammar of the language was itself almost a sealed book. I remember how every Greek idiom would prove a quicksand on which the blindly-guided bark of the mind would founder, and every irregular verb a snag on which it would be impaled. Occasionally there would be emitted from the page a faint phosphorescent light to steer by, and some dim notion of the author's meaning would find its smoky way into the crevices of the intellect; but the Trojan campaign was to us a myth indeed.

But never shall we forget the cloudy season of dismay when, in our college days, we were closeted in the professor's chamber, and put to the work of "calculating an eclipse," while we were still in doleful ignorance of almost every mathematical principle which the process involved. The eclipse was permanent, so far as any help of ours was concerned.

Now these afflictions it will do to smile at after they are over, and we are not ashamed to be candid; but, at the time, they are real enough. And it is not only the temporary misery which is thus occasioned that we have to deplore, but the permanent mischief that is done to the mind. It is, to some extent, irreparable. It interferes with the early and healthy discipline of the intellect, and the injury which is thus wrought can never be fully remedied. The technical knowledge which we fail to acquire in our school-days we may afterwards make up; but the loss of sound mental training and strict discipline cannot be afterwards supplied. There is an injury done to the very texture of the mind—it becomes ine-

lastic, flaccid, inert. It always requires an effort to get it into working order, and then it works spasmodically, fitfully, like an engine whose valves are out of joint. I think that we have here come upon the greatest defect in American education. It is a radical evil; it goes right down to the foundation. See to it that the children committed to your care understand the road over which they profess to have travelled, before you allow them to take another forward step.

So far as *positive knowledge* is concerned, all that can be done at school is simply to put the child upon the right track, so that he may perceive the general direction in which he shall afterwards pursue his inquiries. It does not so much matter *how far* he goes while at school, as *how* he goes; for if he wanders out of the true path at the beginning, it will be hard for him to find the road again.

(5.) Closely connected with what has just been said is the next suggestion that we would offer, and that relates to the importance of training the children in our schools to habits of real, discriminative *thought*.

The children of the present generation are coming into the arena of life at a period when this habit will be indispensable, in order to their taking their proper part in the great movements of the times, and also in order to their own personal safety. The next fifty years will probably be as eventful in the domain of sentiment and opinion, as the last half century has been in the region of practical science. A mere mechanical training, a perfunctory education in words and dogmas, will not meet the necessities of the approaching future. The time is hastening when men at large will think; and whenever they think at all, they will, as the phrase has it, think for themselves. This being the case, it is evident that all our ancient, accredited opinions must be submitted to a new and a severe ordeal; and men will then be needed, so trained from childhood that they can stand firm in the storm and hold the helm. It is of tremendous moment, that here in New England, more than anywhere else on the face of the globe, we should educate the coming generation in such a way that they may be able calmly and candidly to balance the tendencies of thought and action; to weigh the laws of evidence; to analyze and separate the evil from the good; to see what is worth retaining in the past, and what must be given up in order to retain the good; to hit the golden mean between sound conservatism and inevitable progress, and thus to steer the State and the

Church over the most perilous sea which either has ever yet traversed. All the conditions of a sound education that I have mentioned, have a direct bearing upon this result.

To meet the emergencies of the future, we shall need a strong-bodied race, with brains of a firm texture, with well-braced nerves, with tight-corded muscles, men that can give and take a blow without staggering; therefore it is that we would insist so much upon the judicious physical training of our children.

We want also to develop the *peculiar* powers of every individual, that society may have the benefit of his services in the department for which nature has fitted him; therefore we advise teachers to study and to recognize, in the education of the young, the peculiarities of their individual temperament—always remembering that every human being may be made good for something.

And then we want to cultivate robust minds, symmetrical, well-poised, free from all morbid, excessive, and one-sided protuberances, capable of strong, self-moved, and independent action; competent to stand alone and defy the world, if God and the right demand it, and yet so docile that a little child may lead them, if he only hold them by the bands of truth.

In the great contest which the world is nearing, it is *mind* which will be in demand; it is the power that comes from within which is to rule the nations, and this power it is your business to cultivate. I do not mean, exclusively or primarily, political power, as destined to control the world; just in proportion as the world advances this becomes one of the subordinate powers—it is fast becoming so among us; but it is the influence of *general* thought, developed in the operations of trade, in the inventions of the workshop, in labor-saving contrivances, in scientific agriculture, and in all the myriad processes which form the staple of ordinary life—it is this which is shaping our national destiny. And this is a power which starts from the school-room, and keeps exact pace with the progress of general education.

Our Puritan ancestors established the system of common schools, as the statute tells us, in order that they might foil the devices of that old deceiver Satan, whose art it is to keep the world in ignorance. It was a happy thought, and Satan must have quaked to the centre, on the day when that bill passed to the third reading. For, I take it, there is little danger, here in New England, that our popular education will ever become of that sort which only increases

the power of evil. I do not myself believe that mere secular knowledge has any natural tendency to deprave the public mind. I believe that the more the world knows, the safer it is: I do not believe that man can know too much of any thing, unless indeed he learn it through some sinful experience: I do not believe there is any forbidden ground which the human mind may not lawfully and beneficially explore: I believe that the more thorough, comprehensive, analytical, and scientific the grasp which we can take of any subject, the better; and yet I know that an education which is only secular and scientific, is most lamentably defective. There are parts of man, besides his mental faculties, which need a firm and vigorous culture; there are responsibilities, attaching themselves to man, which draw upon other resources in his nature; and there is an immortality before him, for which the whole of mortal life is only a school of preparation.

It is not your special business to teach religious truth, and your position forbids you to meddle with the dogmas which divide the Christian world: I, for one, am not sorry that it does; but it does come within your province to infuse into all your teachings those wholesome, elevating, Christ-like influences, which are the very essence of our holy religion. What these are, and how they are to be applied, we all practically agree, as soon as we get earnestly to work, however we may diverge in our theories. If it is in your heart to do your pupils good, as moral as well as intellectual beings, you will find some way to do it. Every child will feel, at least, the reflex influence of your own elevated character. And you will, insensibly, make all knowledge fragrant of divinity. You will create around you a sphere of holiness, within which your children will be attracted. It is the moral atmosphere which a child breathes that mainly affects the healthiness of his soul. It is what he sees and feels, rather than what he hears, which impresses him. It is not the old precept, but the living magnetism of sympathy which makes the chords of his soul vibrate.

And what a thought it is, that the notes you are the first to draw forth from these young hearts, are destined to sound on, ages after you are dead, joining their melody or their discords with the solemn music of eternity!

IX. LETTERS TO A YOUNG TEACHER.

BY GIDEON F. THAYER,

Late Principal of Chauncy-Hall School, Boston.

TEACHERS, like men of all other vocations, are subject to human infirmities; although, in judging them, this consideration is often overlooked. Hence, the increased importance of that self-control which has already been urged on your attention. In our own days, as well as in those of Goldsmith, it is a melancholy fact that the state of mind in which a teacher enters his school-room, and begins the duties of the day, is but too often the foretokening of the day's occurrences;

"As coming events cast their shadows before."

O, furnish no just cause to have it said of you,

"Well had the boding tremblers learned to trace
The day's disasters in his morning face."

Let your habits be regular. I mean as to your diet, amount of sleep, exercise, &c. Your temper of mind, your feelings, your nervous system, will depend essentially on this; and these will affect your school-room operations. Some persons, with iron constitutions, are able, for a time, to live recklessly, and yet escape the immediate infliction of the legitimate penalties. They are, however, in their cases, only postponed: *their sin will find them out*. But, with few exceptions, school-teachers have not the bodily vigor to withstand the effects of irregularities of living. They either enter on the profession before the muscular system is hardened into maturity, or, under a confinement to which they had not been accustomed, they usually impair the strength they brought to it, and thus quicken into life those infirmities so fatal to success. I am not speaking of habits of a criminal nature; but of those to which worthy, moral young men, from inconsideration, are very apt to become addicted—and this, as they think, in a good cause. For example: they feel a deficiency of knowledge in some science they are required to teach, or they wish to pursue their investigations in some favorite study; and, aware that the quiet hours of night are most favorable to their purpose, they

draw on those hours to such an unreasonable amount, as to leave but a very inadequate portion to meet the claims of the drowsy god; which claims can never be met but in kind—no substitute being, by Nature's unyielding laws, ever admitted. This, then, is the first and great requisition—a liberal amount of sleep, and taken as regularly as practicable. Any degree of knowledge, procured at the sacrifice of needful sleep, is too dearly purchased; especially by him whose days are to be devoted to the instruction and training of the young.

Many persons have tried the experiment of living without sleep, or of showing with how small a portion they could live; but, if they have not died under the trial, they have so impaired their physical powers as to have made the latter part of their lives a burden—full of ails and of nervous annoyances.

It is true, that Napoleon, while in his career of conquest, dashing like a meteor over half of vanquished Europe, lived for months together with but a very few hours of sleep in the twenty-four; and, during a large part of his time, in the saddle. But he was a man of extraordinary vigor of body as well as of mind; possessed an indomitable will, and a fixedness of purpose that knew no aspect but success. Reared in the camp, proof against exposure to the elements and to hardship, he was a model that few could successfully emulate; and, by no means, a suitable one for your fraternity.

Next to sleep, I would speak of food; a liberal supply of which, and that of a nutritious character, I deem indispensable to health and usefulness. I am aware that opinions differ on this point; but experience and observation prove the affirmative of it. The well-considered laws of health, founded upon the structure and natural desires of a human being, testify to it. I say a *liberal* supply; I do not mean a quantity unreasonable in amount or variety. I repudiate the idea of excess. Gluttony may claim as many victims as Intemperance. There is a rational course, which every one who carefully considers the subject may easily ascertain. Let it but be deemed of sufficient importance to secure attention to it, and the evil will be avoided.

On this point, I speak from feeling as well as from conviction. I had, associated with me in school, for eight years, one of the best men, and most successful teachers, that it has been my fortune to know. It was CLEMENT DUBGIN; and I am glad of this opportunity of placing his name on record, where it may meet the eyes of his many friends, in connection with a slight tribute to his memory and his worth. It should have been done long ago, by an abler pen: it could not have been performed by a warmer friend.

Mr. Durgin was a self-educated man, and he did the service well. He far more nearly verified the common remark of school-boys, "He knows everything," than many of those who are distinguished by college honors of the first, second, or even third degree. He was a universal student; not of printed books merely, but of the great book of Nature—not sealed to him, but ever open, and read with understanding and perpetual delight. The pebble, the tiny wild-flower, the buzzing insect, the downy moss, the magnificent tree, the singing bird,—all created things, animate and inanimate, were subjects of his contemplation, and furnished him with lessons which enriched his school instructions, while they attuned his mind to harmony and love. Always equable and self-possessed, he seemed to have imbibed the influence of the Source of kindness, the Giver of all wisdom. He was devoted to Natural Science, and to all science, not only from their intrinsic attraction, but from a laudable ambition to *be* something, and *do* something, in the world. His lectures and addresses, orations and poems,—for he was no mean poet,—evinced knowledge, judgment, patriotism, and taste, of which many young men would have been proud. Patient of labor, and willing to oblige, he was called on to devote many an hour, after his day's school-toil was over, to the preparation of literary performances for lyceums, anniversary occasions, temperance societies, national holidays, &c., to which he always cordially responded, and which he successfully performed.

These proved a fatal temptation to him. Unwilling to present anything not worthy of himself and the occasion, or that should fall below the anticipations of his friends, he bestowed much care and time upon them, and these at the expense of needful rest and bodily exercise, crowning his error with abstinence from suitable food. Having an idea that his intellect was clearer when but little food was in the stomach, he indulged sparingly in eating, and abandoned the use of solid animal food altogether—taking, instead, vegetables, fruit, and pastry, with a little milk. For a short time, he found he could write with more facility and readiness; but nature soon revolted, demanding a supply of nourishment which his newly-assumed diet did not furnish, and which was needed all the more from his accumulated mental labors. This demand was not complied with, or acceded to too late; and he fell into a decline, from which no curative treatment could restore him, and died of rapid consumption, a few months after, at the early age of thirty-one years—a victim to too rigid a system of dietetics, and too small an allowance of sleep and bodily exercise. And yet, so far as man could judge, with the capacity of fulfilling the three-score and ten years assigned as the lifetime of a human being.

His ashes repose amid the quiet shades of Mount Auburn, the trustees having accorded a small triangular lot for the purpose ; and on the tablet of his monument is inscribed the following epitaph :

"Clement Durgin, associate principal of Chauncy-Hall School, Boston. Born, Sept. 29, 1802 ; died, Sept. 30, 1833 : a student and lover of nature, in her wonders, he saw and acknowledged, and through them adored her beneficent Author. His life was a beautiful illustration of his philosophy ; his death, of the triumph of his faith.

"His pupils have reared this monument, as an imperfect memorial of their grateful affection and respect."

The loss of a life so valuable to myself, to the profession, and to the community, I have unceasingly mourned ; and cannot but cherish the hope, that others, influenced by similar tendencies to his, will take warning from this melancholy example, and be just to the claims of their physical nature, as well as to the aspirations of the nobler part ; remembering that man is a complex being, and that to neglect the wants of either of the two principal elements is certain eventually to destroy or impair the power of both.

I have here, incidentally, introduced the subject of exercise ; but wish to say a word more upon it, and particularly on the mode of taking it. Exercise derived from swinging dumb-bells in your chamber, or from splitting wood in a cellar, is of but little use. It will quicken the flow of the blood, and, consequently, warm the system ; but more than this should be aimed at, that the mind may also have a share in the benefit sought for. Choose a place, then, if you can, where the scenery is attractive, and the objects are such as to make you forget yourself, and the reason of your being abroad. If you are favored with a locality that furnishes a water view, seek that, and you will not want for incidents of interest. If, instead, you have hills, or mountains, or forests, they will furnish you with agreeable subjects for reflection, and tend to call you out of yourself, and away from the petty cares of the school-room, or the gossip of the village—a matter of no inconsiderable importance. That sleep is sweetest and most refreshing, which is taken with the mind in a quiet state, destitute of cares or disturbing thoughts, which generate unquiet dreams : so exercise, enjoyed without the intrusion of distracting thoughts, or of objects foreign to the scene around, is not only most agreeable and recuperative, but that alone which is worth the having.

Exercise should, if possible, be taken in the daytime, in the broad sunlight. Everything that grows needs this. The esculent that sprouts in your cellar has no vigor, no greenness, no flavor ; it needs the air and the sunshine to give it these. Fishes that are found in the

pools of caves, where the beams of the sun never smile, are destitute of eyesight. It is the light and warmth of the sun that cheer, embellish, and bless. Make it a point, therefore, that your exercise may be truly useful to you, to take it, as here indicated, under circumstances as advantageous as possible; but be sure, at all events, to secure daily a needful amount of it.

Attention to these suggestions will do more than anything else within your ability to present you, each day, to your responsible charge with that preparation so indispensable to complete success.

In the opening chapter of Ernest Linwood, the last work of my lamented and highly-gifted friend, MRS. CAROLINE LEE HENTZ, a description of a school scene, in the early days of the heroine of the book, is given, so true to life, and to the practices in the schools of forty or fifty years back, that I hope I shall be pardoned for transcribing a portion of it. If it be objected that this is a work of fiction, my reply is, that such scenes were formerly common in our schools; and, I grieve to say, are not wholly obsolete at the present day.

"With an incident of my childhood," begins the book, "I will commence the record of my life. It stands out in bold prominence, rugged and bleak, through the haze of memory.

"I was only twelve years old. He might have spoken less harshly. He might have remembered and pitied my youth and sensitiveness, that tall, powerful, hitherto kind man,—my preceptor, and, as I believed, my friend. Listen to what he did say, in the presence of the whole school of boys, as well as girls, assembled on that day to hear the weekly exercises read, written on subjects which the master had given us the previous week.

"One by one, we were called up to the platform, where he sat enthroned in all the majesty of the Olympian King-god. One by one, the manuscripts were read by their youthful authors; the criticisms uttered, which marked them with honor or shame; gliding figures passed each other, going and returning, while a hasty exchange of glances betrayed the flash of triumph, or the gloom of disappointment.

"'Gabriella Lyun!' The name sounded like thunder in my ears. I rose, trembling, blushing, feeling as if every pair of eyes in the hall were burning like red-hot balls on my face. I tried to move, but my feet were glued to the floor.

"'Gabriella Lyun!'

"The tone was louder, more commanding, and I dared not resist the mandate. The greater fear conquered the less. With a desperate

effort I walked, or rather rushed, up the steps, the paper fluttering in my hand, as if blown upon by a strong wind.

“‘A little less haste would be more decorous, miss.’

“The shadow of a pair of beetling brows rolled darkly over me. Had I stood beneath an overhanging cliff, with the ocean waves dashing at my feet, I could not have felt more awe or dread. A mist settled on my eyes.

“‘Read!’ cried the master, waving his ferula with a commanding gesture,—‘our time is precious.’

“I opened my lips, but no sound issued from my paralyzed tongue. With a feeling of horror, which the intensely diffident can understand, and only they, I turned, and was about to fly to my seat, when a large, strong hand pressed its weight upon my shoulder, and arrested my flight.

“‘Stay where you are!’ exclaimed Mr. Regulus. ‘Have I not lectured you a hundred times on this preposterous shamefacedness of yours? Am I a Draco with laws written in blood, a tyrant scourging with an iron rod, that you thus shrink and tremble before me? Read, or suffer the penalty due to disobedience and waywardness.’

“Thus threatened, I did read,—one stanza. I could not go on, though the scaffold were the doom of my silence.

“‘What foolery is this? Give it to me!’

“The paper was pulled from my clinging fingers. Clearing his throat with a loud and prolonged hem, then giving a flourish of his ruler on the desk, he read, in a tone of withering derision, the warm breathings of a child’s heart and soul, struggling after immortality,—the spirit and trembling utterance of long-cherished, long-imprisoned yearnings.

“Now, when, after years of reflection, I look back on that never-to-be-forgotten moment, I can form a true estimate of the poem subjected to that fiery ordeal, I wonder the paper did not scorch and shrivel up like a burning scroll. It did not deserve ridicule. The thoughts were fresh and glowing, the measure correct, the versification melodious. It was the genuine offspring of a young imagination, urged by the ‘strong necessity’ of giving utterance to its bright idealities—the sighings of a heart looking beyond its lowly and lonely destiny. Ah! Mr. Regulus, you were cruel then.

“Methinks I see him, hear him now, weighing in the iron scales of criticism every springing, winged idea, cutting and slashing the words till it seemed to me they dropped blood, then glancing from me to the living rows of benches, with such a cold, sarcastic smile!

* * * * *

"Had I received encouragement instead of rebuke, praise instead of ridicule,—had he taken me by the hand and spoken some such kindly words as these :

" 'This is very well for a little girl like you. Lift up that down-cast face, nor blush and tremble as if detected in a guilty act. You must not spend too much time in the reveries of imagination, for this is a working-day world, my child. Even the birds have to build their nests, and the coral insect is a mighty laborer. The gift of song is sweet, and may be made an instrument of the Creator's glory. The first notes of the lark are feeble, compared to his heaven-high strains. The fainter dawn precedes the risen day.'

" O ! had he addressed me in indulgent words as these, who knows but that, like burning Sappho, I might have sung as well as loved ?

* * * * *

" I remember very well what the master said, instead of the imagined words I have written.

" 'Poetry, is it ?—or something you meant to be called by that name ? Nonsense, child !—folly, moonbeam hallucination ! Child, do you know that this is an unpardonable waste of time ? Do you remember that opportunities of improvement are given you to enable you hereafter to secure an honorable independence ? This accounts for your reveries over the black-board, your indifference to mathematics, that grand and glorious science ! Poetry !—ha ! ha ! I began to think you did not understand the use of capitals,—ha ! ha !'

" Did you ever imagine how a tender loaf of bread must feel when cut into slices by the sharpened knife ?—how the young bark feels when the iron wedge is driven through it with cleaving force ? I think I can, by the experience of that hour. I stood with quivering lip, burning cheek, and panting breast, my eyes riveted on the paper, which he flourished in his left hand, pointing *at* it with the fore-finger of his right.

" 'He shall not go on !' said I to myself, exasperation giving me boldness ; ' he shall not read what I have written of my mother ! I will die sooner ! He may insult *my* poverty, but hers shall be sacred, and her sorrows too !'

" I sprang forward, forgetting everything in the fear of hearing *her* name associated with derision, and attempted to get possession of the manuscript. A fly might as well attempt to wring the trunk of the elephant.

" 'Really, little poetess, you are getting bold ! I should like to see you try that again ! You had better keep quiet !'

" A resolute glance of the keen, black eye,—resolute, yet twinkling

with secret merriment,—and he was about to commence another stanza.

“I jumped up with the leap of the panther. I could not loosen his strong grasp, but I tore the paper from round his fingers, ran down the steps through the rows of desks and benches, without looking to the right or left, and flew, without bonnet or covering, out into the broad sunlight and open air.

“‘Come back, this moment!’

“The thundering voice of the master rolled after me like a heavy stone, threatening to crush me as it rolled. I bounded on before it, with constantly accelerated speed.

“Go back—never!

“I said this to myself. I repeated it aloud to the breeze that came coolly and soothingly through the green boughs, to fan the burning cheeks of the fugitive. At length, the dread of pursuit subsiding, I slackened my steps, and cast a furtive glance behind me. The cupola of the academy gleamed white through the oak trees that surrounded it, and above them the glittering vane, fashioned in the form of a giant pen, seemed writing on the azure page of heaven.

“I cast myself, panting, on the turf, and, turning my face downward instead of upward, clasped my hands over it, and the hot tears gushed in scalding streams through my fingers, till the pillow of earth was all wet as with a shower.”

In the sequel of this story, the child is forgiven, and the teacher confesses that he had been unkind, pleading that he “had been previously much chafed, and, as is too often the case, the irritation caused by the offences of many,” as he said, “burst forth on one, perhaps the most innocent of all.”

Here, then, is the lesson of this letter. Strive to adopt such a course of life as will enable you to keep the feelings and passions under control. Avoid all occasions of angry excitement; and endeavor, on entering your school-room, to leave spleen behind, lest it be vented on the innocent, and you yourself suffer the mortification and regret of being unjust to those you are bound to protect, to guide, and love.

The illustrations I have given, both from fact and fiction, unite in enforcing the same idea. They both show the sad consequences of a mistaken course, on the actor and on those interested in or connected with him.

Other lives are yet to be sacrificed under similar impulses, and other teachers to lose their character and their dignity, when they yield the reins to impatient emotion.

X. HEALTH OF TEACHERS AND PUPILS.

BY CATHARINE E. BEECHER.

[THE following communication was addressed by Miss C. E. Beecher to the AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF EDUCATION, and read before that body, at its last annual meeting, at Detroit, on the 13th of August. The subject is of the highest practical importance, and we hope to see it discussed thoroughly in the pages of this Journal, from time to time.—Ed.]

Having received the kind assurances of your late President that an article from my pen should be communicated to you, allow me first to express my regret that for years I have been precluded by the *state of my health* from personal attendance at your annual meetings, and chiefly because they are so *interesting* that the excitement would prove injurious.

This very statement introduces the subject to which I ask your attention, and that is, *the Health of Teachers and Pupils in our country*.

In the statements that follow, I shall not attempt to *prove* what I offer. All I shall do will be to *ask your attention*, with the hope that what is offered will at least induce inquiries on your part, and that the prosecution of such inquiries will result in future efficient action. Permit me first to state some results of my own investigations on the subject of national health, which, if not to others, at least to my own mind, are *facts*.

The Anglo-American race in the United States, when developed under the most favorable circumstances, are the *model race*,—the *highest specimen of humanity yet known*. The facts from which this is deduced have been accumulating for years in the hands of a scientific gentleman, and, in due time, will be published. As a specimen, the inhabitants of the mountain districts in Kentucky and Tennessee,—where men, women, and children, live in pure air, both night and day, eat simple food, and exercise abundantly,—grow up to a stature and strength which seem prodigious. When Dr. Caldwell, of Kentucky, and two or three others, thus born and reared, went to England and France, as medical students, they were annoyed in the streets by admiring crowds, who deemed their well-developed and towering forms as specimen giants. But, their native states could show multi-

tudes of such. Now, history shows us that it is the best physically developed races that are the *conquering races*, and that degenerated and enfeebled races become the conquered. It was the athletic training of the Greeks that, under Alexander, enabled them to bear such protracted and astonishing fatigue and exertions,—and thus they conquered the world.

It was when the Roman armies were at the height of their physical development that their sturdy cohorts conquered the world. And, when that nation sunk to an effeminate race, though highly cultivated in mind, they become the slaves of the sturdy, well-developed, though ignorant barbarians.

It is a fact that the home-reared Englishman, like *his cattle*, has been constantly an *improving stock*, so that the armors preserved, and once worn by the Norman conquerors, are too small for their improved descendants.

But, in our own land, the reverse is becoming true. General Washington and his staff were not men *picked* for size or strength, and their average weight was *two hundred*, and their physical developments were such as are but rarely seen at this day.

Instead of the physical advance witnessed in our father land, there is evidence of such degeneration,—and mainly too within the last century,—that, should the ratio continue, a few more generations would show the result in a race of *sickly and deformed pigmies*.

As evidence of this deterioration, may be mentioned the universal impression made upon foreigners when they first arrive here, and observe the proportion of *sallow, thin, and unhealthful countenances*, and the directly opposite impression when our countrymen first encounter the *ruddy, healthful countenances* to be met in England.

Returned missionaries, who compare the present generation with the one they left thirty years ago, testify to a great change in respect to the unhealthful appearance of this generation, when compared with the one they left.

Physicians all over the land testify to the increase of physical debility and nervous diseases, that all show the deterioration of the whole physical organism. And, our *blood*, that vital current which nourishes all parts, has become so corrupt that medical men declare that nearly half our population have a *scrofulous taint*.

The reasons for all this are perfectly apparent. *There has been an entire change in the habits of this nation within thirty years*. In the first place, we have changed from *open fire-places*, that secured a constant flow of pure and cool air, to *close stoves*, that allow neither. Even furnace heating is so managed as to give lungs and skin

overheated air, deprived of part of its oxygen, and thus the system is debilitated. Beside this, our houses are made *tighter* than they used to be, so as to exclude the pure air, both by day and night.

Then the abundance of our prosperity, extending to all classes, has resulted in pernicious *habits of diet*. We not only eat, ourselves, but we give to children such quantities of candies, condiments, and confectionery, as never were heard of in former generations. The amount of sugar, molasses, and sweet cooking given to children in this country, is such as is never seen in any other.

Then we eat *hot* food, and *greasy* food, and *high-seasoned* food, and *indigestible* food, and food *hastily masticated*, and food at *irregular hours*,—as was never done by our ancestors. Thus, the air and the food, by which the body is built up, both become causes of debility and disease.

Next comes the increased *stimulation of the brain and nerves* in all possible ways. First, the use of tea, coffee, tobacco, alcohol, and pernicious medical drugs, have increased at a prodigious rate in fifty years. Men, women, and children drink tea and coffee with a frequency and a degree of strength never known among our ancestors. Then the men and boys are stimulating the brain and nerves with the poisonous tobacco as was never done before, while alcohol, though somewhat restrained, still exerts its debilitating influence over multitudes that never pass for hard drinkers.

A meat diet, too, is more stimulating than any other, and no other nation devours such quantities as ours.

To all this physical stimulation is added an amount of intellectual and business excitement for adults, such as was never imagined in former days, while the mental taxation to children in schools is fifty-fold what it was in a former generation.

Fifty years ago, to read, write, and cypher was about all that was expected of the masses, and all that was taught to those not going to college. No daily drilling in crowded and hot school-rooms, in all manner of sciences, with evening lessons at home. No Sunday lessons, no books for children at every turn. Such intellectual stimulus for children was never known in a former generation, while the cares, business, and excitement of all kinds for men and women have increased at an equal ratio. Every thing is going on at high steam pressure. Now, the more the brain is exercised, the greater the need there is for pure air and exercise. This presents another great change in our habits from those of our ancestors.

In former days, children worked with their parents, during the whole period of their growth almost universally. But, in these days,
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the greater portion of parents, when they send their children to school, require little or no labor from them.

Now, to balance this great increase of intellectual stimulation, there should be a corresponding increase of *physical* exercise. The nerves of *motion* are the *balance power* to the system, so that exercise must always increase as mental excitement increases. But, this law of our nature has been exactly reversed. Just as all kinds of stimulation have increased, the habits of physical exercise have decreased.

To this has been added frightful abuses in the fashions of female dress, that lead to debility, distortion, and diseases, by which the mothers of the present and coming generation are entailing debility on their offspring.

These are the changes in our habits and customs that are deteriorating the noblest physical race the sun ever looked upon, and which are scattering debility, decay, misery, and sickness all over the land.

These are the practices that are debilitating the constitutions of the teachers and the pupils all over the nations.

Is there any remedy?

It is the object of this article to show that there *is* a remedy; that it is a sure and speedy one; and, that this remedy is in the hands of the *teachers* of this nation, more than of any other class of persons.

What then is to be done? The first thing is to make the *teachers*, the *children*, and the *parents understand the case*. They need not merely to learn the construction and physiology of the human frame. They need this only so far as is needful, in order to comprehend the *laws of health*; but, for the end aimed at, they need no more.

For this purpose, they need a short, simple course of *practical* instruction on the *laws of health, as the laws of God, which they commit sin in violating as really as when they steal or lie*. And they need to have the consequences of violating these laws urged on their attention as often and as earnestly as are their *religious* duties, and the penalties of another world.

A school-book that is so simple that children, with a little help from teachers, can understand it, and so popular in form that parents will read it at home, this is the first *desideratum*.

Could this be secured, then the teacher, and parents, and pupils would have a constant monitor of their danger and duties. A weekly or tri-weekly lesson in such a book would have the same effect on teachers and pupils in leading to a consideration of and obedience to the laws of health, as is secured by Sunday and weekly sermons and lectures in keeping up an attention to strictly religious duties.

With this should be combined a daily course of *physical training*

in school; in which teachers and pupils should unite. This should be scientific, designed to exercise every muscle of the body, and to be proportioned to the amount of intellectual excitement connected with schools. There is *no other way* in which both the teachers and the children of this nation can be led to a regular and systematic course of exercise.

Any such system never will be practised by individuals alone. The assembling of pupils and scholars gives a daily opportunity to unite social excitement, rhythm, and harmony of motion, and a regular and effective course of physical training.

This was the course adopted by the Greeks with such wonderful success as made them at once the strongest, wisest, and most beautiful nation on earth. This is the course which is extensively adopted in European schools, with like beneficial results.

Could such a system of instruction in the laws of health, and such a course of physical training, be *instantly* enforced in all the schools of this nation, there would be an *immediate* remedy for the evils and dangers, so far as the rising generation and their teachers are concerned.

But, this speedy action can not be effected. For the last thirty or forty years, all the energies of parents, children, teachers, school-committees, philanthropists, and legislatures, has been directed to the intellectual training of the children. All this pressure has been put on the *brain and nerves*, while the *body* has been entirely neglected, and has staggered and fainted under the pressure.

The American people never do any thing *moderately*. They go by *steam pressure* in every thing. They have been working on the brain and nerves of childhood for thirty years or more, till the whole physical condition of our nation is falling to decay.

Now, if we can only start them as energetically in the direction of a *healthy and thorough physical training*, they will be as speedy and efficient in this as in every thing else.

But, *how can* they be thus moved? The first step must be to convince them of the evils that have resulted from the neglect of physical training in our schools. We need to have investigations made, as to the health of the teachers and pupils all over the land, and then to have the results scattered all over the nation. That such investigations are practicable, if teachers can be induced to lend their aid for the purpose, a few experiments of the writer have proved.

In order to do this, teachers need first to learn to understand the signs and causes of debility and deformity.

For example, when there is a debility of constitution, owing to all

the causes that have been set forth, especially where there has been little pure air and exercise to invigorate it, then all the muscles of the body become flabby and weak.

The most dangerous result of this is on the *abdominal muscles*, by which the whole interior of the body is held up in its proper form, and firm packing.

When these muscles become debilitated, the whole organism *sinks downward*, enlarging the lower part, while the chest becomes flattened, and the shoulders consequently bent forward.

Thus, also, the erect position of the body, (which is secured, to a great extent, by the close and tight packing of the intestines, and sustained mainly by these abdominal muscles,) begins to fail. The falling of the lower portion makes a hollow and weak feeling in the center of the body, and gradually it bends forward. Thus comes so many flat chests, and crooked backs, and projecting necks.

Again, by neglect of exercise, bad food, and bad air, the whole body is debilitated. Then, in young girls, the tight dresses, and monstrous weight and heat of the clothing around the lower part of the body, with unhealthful positions in bed and in school, produce another deformity called *lateral curvature of the spine*. This is indicated by one shoulder, or one hip, or both, being higher than the other, or by the projection of one shoulder-blade more than the other.

Again, when children breathe the contaminated air of crowded or ill-ventilated school-rooms, or bed-rooms, and when, too, their brains are overtaxed with too much intellectual effort, without counterbalancing exercise, a *headache* is the ordinary index of approaching greater evils.

These three items furnish data for one species of investigation, in which teachers can lend their aid. As a specimen, the writer visited one city school for young ladies, for this purpose, and found that of 148 pupils, who were examined, *three-fourths* had more or less headache; and, *thirty-five*, or nearly one-quarter of the 148, had lateral curvature of the spine in different stages.

In another large country boarding-school, where the pupils were chiefly from the industrial classes, of 109 examined, *fifty* or nearly *one-half* had more or less curvature of the spine. Of the flat chests, round shoulders, and bent bodies, produced by debility, no account was at that time taken, but they abounded on every side.

Now, may it not be practicable, by influences and measures that shall emanate from your honorable body, to engage the teachers of this country in investigations of this sort, which eventually shall be published to the nation at large? Would not such measures tend,

more than anything else could do, to direct the attention of parents, teachers, and pupils to the evils and dangers that threaten us, as well as to induce measures for the remedy? And, what other body could so appropriately suggest and promote this investigation as the one I have now addressed?

This, then is the first practical point, to which I beg leave to direct your attention, viz.: *the institution of some method for ascertaining the state of health of the teachers and children of this nation, with a view to introducing a system of physical training in all the schools of the land.*

The second point to which I would ask attention, is the course of instructions contained in a work entitled, *Physiology and Calisthenics for Families and Schools*, the copy-right interest of the author being wholly given to the cause of education. In this work, the *desideratum* in most school-books in Physiology is aimed at. No more of the science and teachers of physiology are introduced than is needful to make the laws of health appear intelligible and reasonable, while the great aim is to make parents, teachers, and pupils feel that the *laws of health are the laws of God, and to lead them to understand and obey them.* With this is connected a course of scientific CALISTHENIC TRAINING.

The copy-right of this work is given to a benevolent educational association, and their agents, in five of our chief cities, offer it for sale, so that, when purchased of them, neither publishers or author shall have one cent of the profit; but, the whole goes to promote the interests of physical education, by the endowment of institutions where a teacher shall be sustained by these funds for the express purpose of attending to the health of the pupils. It is this fact which makes it proper to ask your attention to this work when all other authors and publishers must be excluded from your attention.

Another work, entitled *Letters to the People on Health and Happiness*, is also given to the same benevolent association. The first portion of this work is very similar to the other, but the latter portion contains statistics in regard to the destruction of female health and of dangers to the health and morals of young children at school, to which also your attention is sought. The changes in the healthful habits of this nation; and, especially the great increase of intellectual stimulation in the education of girls, have produced results in regard to the women of this nation that are destructive alike to health and to domestic happiness, while young children are exposed to sufferings and temptations that were never known in former days.

There is no class of women who are so great sufferers from want of

pure air and exercise, and over-excitement of the brain, as *female teachers*. There are statistics of female health in the *Letters to the People*, which every teacher and every parent should obtain and deeply ponder. It is the deep conviction of the writer that *four out of five* of the female teachers of this country *lose their health*, in most cases, in less than five years service. The destruction of female health in the chief and only liberal profession open to woman, is one of the most melancholy developments of the day.

As before mentioned, both these works are similar in presenting a short and popular account of the construction of the human body and the laws of health in the first part. It is the *last* portion that, in the one, contains a system of physical training adapted to common schools, and, in the other, the statistics of health, and the dangers to the young above referred to.

Permit me again to call your attention to a third point, with which the preceding is intimately connected, viz.: the benevolent association referred to.

It is now thirty years since I first entered your honorable profession. In my earliest published work, in 1829, was first presented to the public the main idea on which that association rests; and that is, that *woman has a profession*, embracing the three departments of *teaching, health, and domestic economy*, and that society have done her a *wrong* in withholding from her such advantages in preparing for it, and such honorable and remunerative employment in it as man secures for his most important professions.

Every person must allow that woman's calling is to educate children, to be the nurse of infancy and of the sick, and to superintend the domestic economy of the family state. These are the three departments of woman's profession, as distinct and as important as those of law, medicine, and theology for man.

To sustain and render honorable *their* three professions, men invest large sums in buildings, libraries, and apparatus, and then supply *endowments* to support the highest class of teachers. This secures to men the highest style of education for their professions, while it supports a large class of educators of the *male sex* in honor, and literary ease and success.

Now, it is well-known that the *wrongs of women* have been urged on the attention of the public by an organization of talented and energetic men and women, who command a wide and increasing sympathy. To remedy the wrongs set forth, they urge, "*Give us the professions of man, and access to his institutions for preparation.*"

The *American Woman's Educational Association*, on the contrary,

urges,—Give us institutions that shall prepare us for *our own distinctive profession*, and give us *honorable and remunerative employment* in it.

In carrying out the aim of this Association, the attempt is made to secure *endowed* institutions for women, in which the three departments of woman's profession shall have teachers sustained to give their whole attention to these departments,—just as the other sex support teachers to train young men for law, medicine, and divinity.

The Managers of this Association are some of the most distinguished educators and authoresses in the nation, while gentlemen of high character are incorporated to hold and administer funds under the direction of these ladies, and for the purposes above specified. It is this Association which will receive all the profits that may be made on the works offered to your attention.

Should the work on Physiology prove to be such a work on health as should be introduced into schools, in preference to those that are more scientific and less practical, and should the system of Calisthenics, appended to this Physiology, be generally adopted, two objects would be accomplished. The knowledge and practice that are essential to national health would be extended, and the income thus raised would be secured to those interests of woman and her profession which have been most neglected.

It is to the most liberal, cultivated, and enlightened portion of the community that we must look for aid in this effort to advance the true and best interests of woman, by methods that even the most conservative approve. And, where can we hope to find higher specimens of them than in your honorable body.

And now, as the period approaches in which I am to forsake all active efforts in the profession which I love, and which I have served so long, and as those forebodings of a final parting, that always attend the first crossing of the ocean and an absence, it may be of years, gather around, I seem to be addressing words of parting and bequest to my brethren and sisters, who have labored with me in the same noble and as yet unappreciated profession.

Permit me, then, to resign to your sympathy and care that department of the great field for which I have toiled so long, and now can toil no more. It is the PROFESSIONAL interests of my own sex; that department of woman's training that prepares her for her *special* duties as *educator*, *nurse*, and *housekeeper*, and aims to provide her honorable and remunerative employment in those duties.

My life's history, embracing the establishment of institutions for intellectual training to fit women *to teach*, the preparation of works

on *Physiology and Health*, to fit her to be a nurse of infancy and the sick, and of works on *Domestic Economy*, to train her to be a good housekeeper; the enterprise to provide honorable employment for her in her profession, so successfully conducted by Gov. Slade; and, finally, the *American Woman's Educational Association*, which embraces all these objects,—has been one systematic and comprehensive effort, that have absorbed all my thoughts, my time, and my income, for more than thirty years.

At the commencement of that career, I was among the earliest pioneers in advancing woman's claim to higher intellectual culture. So far as I knew then, the institution at Hartford, Conn., under my care, was the first to introduce Geometry, and Algebra, and several other branches, never before studied by woman. And, I stimulated my own brain, and the brains of my pupils, without fear or stint, as thousands are now doing; when, suddenly and unwarned, at the end of ten years, my whole nervous fountain gave out, and my physical system was irretrievably ruined. And, doubtless, many of my pupils were equal sufferers from my ignorance. The last twenty years has been one of incessant debility and prostration, while, as I journeyed or visited health establishments all over the land, I discovered the dreadful havoc that a similar course is effecting among teachers and pupils all over the land.

Permit me, then to close, by committing to your sympathy and benediction the great interests which have absorbed my life, and will hold my deepest regards to life's final hour. Permit me to remind you, too, that this cause which we are reviving, is the noblest that can engage the thoughts and efforts of man.

All efforts and plans that terminate in earthly prosperity and enjoyment will fade and pass away as eternal years pass by. But, they who on earth educate even *one child* to become the parent of a family, *educate a race*. The children, the children's children, and so on for generations, will reproduce your labors. And, every one of these educated minds will *live forever*, and will turn back to you as that benefactor whose labors have thus brought forth, not an hundred, but a thousand, thousand fold.

[The foregoing communication was referred to the Standing Committee of the Association, to be assigned by them to a Special Committee, to be reported on at the next annual meeting, at Albany.]

XI. ART.—ITS IMPORTANCE AS A BRANCH OF EDUCATION.*

BY M. A. DWIGHT.

THE great advance that has taken place in the standard of knowledge in our country is regarded by all interested in the subject of education as marking an important era. In our common schools, especially in large cities, the standard of intellectual training in all studies pursued, is of the highest order; but, to complete the system, so well approved, one branch more, one too long neglected, must be included in the list of studies, and rank in importance with the rest; that is, the art of drawing. On many occasions, when urging the importance of the study, the response has been, "Of what use is it?" By way of answering the question, let us go back to the earliest period of which we have any record and consider the beginning of things, when we find, so far as we are able to learn of the rise and progress of art, that all nations have practised it in some form, that it arose with the wants of a people and kept pace with their national progress and cultivation,—the useful arts giving rise to the ornamental, and the ornamental in turn perfecting the useful,—until the skill of the artist contributed materially to their wealth, both individually and nationally.

Take, for instance, the art of coining money. The earliest money transaction on record is that in which it is related that Abraham weighed to Ephron "four hundred shekels of silver, current money with the merchant," in payment for the field of Machpelah. This payment, doubtless, consisted of mere pieces of silver, without any impress or mark, which passed by weight only, as the term shekel, which eventually became the name of positive coins of gold and silver, from *shakal*, to weigh, fully implies. The denomination for money used in the Book of Job is not, however, *shekel*, but *kesitah*, a lamb; as some have thought, from the image of that animal having been stamped on the pieces of the weight of a shekel, as the image of an ox was afterwards placed on the Roman pound weight of copper; the shekel, though at first without mark, being afterward stamped with the symbol of that barter in cattle for which it was the first

* The principal authorities quoted are Muller's "Ancient Art, and its Remains," and Humphrey's works on coins.

more convenient substitute. There is also a hypothesis that *kesitah*, though translated "a piece of money," in our version, may possibly have been actually a lamb; it is most probable, however, that the term *kesitah*, or lamb, refers to the form of the weight by which the shekel of silver is weighed,—the shekel being, probably, the quantity of silver for which a lamb was exchangeable, and the weight by which it was weighed being made in the form of that animal, to represent the kind of cattle and the number, a single lamb,—which that weight of silver represented, when it superseded direct barter. Both the weight and its value in reference to cattle may have been derived from the Egyptians, as, in Egyptian paintings, we find public functionaries,—for, in Egypt, the state superintended all transactions of the kind,—represented in the act of weighing pieces of silver in the form of ring money, with a weight in the form of a lamb, and noting down the amount on a tablet. In the same painting is a weight in the form of half a lamb, the hind quarters evidently representing half the full weight. Similar weights have been discovered in Assyria by Layard, and the Jewish half *shekel* may have been represented in the same way. The *shekel*, when long afterward issued in the form of a positive coin,* was of the weight of two Greek *drachmæ*, and equal, therefore, to about two shillings and three pence, English,—probably the value of a lamb at that period.

The *shekel* of the age of Jacob appears to have been succeeded by the *shekel ha-kodesh*, of the sanctuary, of which the standard remains in the custody of the priests. It would appear that, as commerce increased from the time of Abraham to that of Micah, who lived, according to the ordinary computations, about 1500 years B. C., that commercial wants had greatly increased, and that the pieces of silver used in trade had augmented in number, and diminished in size; for, a transaction of Micah with his mother has reference to a sum of ONE THOUSAND pieces of silver; and, similar sums of one thousand pieces of silver are mentioned three centuries later, in the transactions of the five lords of the Philistines and Delilah; that they were very small pieces is proved by the statement that the lords brought the money in their hands, probably in sealed bags, each containing a certain weight, as represented in Egyptian paintings. Such was the nature of the monetary transactions of the Jews, and it is quite certain that

* The types of this coin are, on the obverse, the sacred cup of manna, which Moses was ordered to preserve, in commemoration of the manna miraculously furnished in the wilderness; and, on the reverse, the rod of Aaron, on which three flowers are shown. The inscriptions are in the ancient Samaritan character. And the most common have, on the obverse, the inscription "*Shekel of Israel*," and, on the reverse, "*Jerusalem the Holy*." Some have such inscriptions as, "*Saviour, Prince of Israel*," "*The first year of the Deliverance of Israel*," etc., etc.

they did not adopt the use of positive coins till long after their introduction into other countries. From the time of Abraham, however, to that of Maccabees, about 144 years B. C., they probably had, like other oriental nations, in addition to their more common money, formed of small pieces of silver, which passed by weight, a kind of "jewel-money," consisting of ear-rings and other personal ornaments, adjusted to a certain weight, which might, on occasion, be used as money. Such are the jewels mentioned in Genesis, xxiv., 22, as given by Abraham's servant to Rebekah. "The man took a golden ear-ring, of half a shekel weight, and two bracelets for the hand, of ten shekels weight of gold." They had a kind of ring-money, no doubt similar to that used afterward by the Celtic nations of the West. The gold and silver ring-money of the East appears to have been formed of wire, bent into a circle, but not fastened, so that it could with ease be made into a chain, from which portions could be detached at pleasure. "We have," says Mr. Bonomi, in an interesting memoir, "the actual representation of this currency among the ancient Ethiopians and Egyptians in hieroglyphic sculptures, in which it is not uncommon to see men weighing rings, and a scribe taking note of their number and value, the gold rings being painted yellow, and the silver, white, accompanied by the hieroglyphics of those metals, engraved or painted near them. The hieroglyphic representative of gold being the crucible, and the crucible crossed by a leek, the symbol of white, representing silver." Similar rings are still current in Nubia, and Mr. Bonomi was enabled to procure some specimens from a *Jelab*, or slave merchant, which he has presented to the Numismatic Society. They varied from a sixteenth to three-sixteenths of an inch in thickness, and, in diameter, the longest way, from two and a half to three inches; the rings of silver were larger, and some of them, which had been worn as bracelets, were ingeniously ornamented with engraved work. The paintings above alluded to also represent sealed bags, containing possibly a number of rings, equal to a certain weight, probably a talent, as would appear by the history of the bags of silver given by Naaman to Gehazi, (2 Kings, v., 23,) each of which contained a talent; being, together with a change of raiment, enough for one man to carry. Other kinds of money, of more primitive character, also existed,—such as engraved stones, like the Egyptian scarabaei; pieces of cloth, or slices of salt, of a certain estimated value, which still form the current money of some parts of Northern Africa, doubtless the remnant of patriarchal times and customs.

The ring-money of the East found its way to the West and North at a very early period, where it was still retained long after regular

coins were known and used. That ring-money was still circulated in Britain in the last century before the Christian era, is proved by the testimony of Cæsar; and, that it was in use in Ireland still more recently, is proved by the continual discovery of rings of that description. In Sweden and Norway, the use of ring-money continued till a comparatively recent period. In the "Chronicles of the Sea-King of Norway," written in the twelfth century, Harold Hardrada is spoken of as,—

"He whom the ravens watch with care,
He who the *gold rings* does not spare; "

and, in another place, the king, Olaf Haroldson, pays the Skald Thor-mod for his song with a gold ring, weighing half a mark. It appears that there were also rings of a mark, and two marks, and some of much greater dimensions. The difference between this ring-money and that which the Egyptian officials are seen weighing is, that the Egyptian rings were not separately adjusted to any special weight, and, therefore, belong to weighed money, an earlier phase of monetary progress. The ring-money of Britain, and the north-west of Europe, was so far in advance of the Egyptian stage as to have each ring adjusted to a special weight, for which it might pass without weighing; the ring-money becoming thus closely analogous to true coinage. From the abundance of specimens found, this money appears to have been more in use in Ireland than in England. The earliest ring-money found in Ireland appears to belong to a period when each ring might pass by *tale* instead of *weight*, in a manner analogous to that of true coins. The smallest rings were found to weigh exactly one-half pennyweight, which appears to have been the unit by which the larger sizes were graduated, up to twelve ounces, forming a system of ring-money, nearly as perfect as that of the stamped coins. A group of brass rings, looped one within the other, exhibits, perhaps, the method of carrying money of this kind.

The large *torques*, and also armlets worn by the Gauls and other nations, were a kind of "*jewel-money*," being adjusted to a certain weight, to pass as money, if required. Cæsar tells us that the Gauls "use for money gold and iron rings of *certain weight*," and makes a similar statement in relation to Britain. The latter (the iron) have all perished by oxidation, but the former are still found in great numbers. To these may be added rings of silver and also of brass, each of a graduated weight. The earliest ring-money appears to have been always open on one side, being, in fact, pieces of wire of a certain length, bent round. The two ends, which were at first plain, were, in after periods singularly flattened and ornamented,—the transition from

the simple piece of wire to the later decorative forms, being perfectly exhibited in a good series of Irish ring-money.

Some of the larger specimens of this ring-money are very curious and beautiful, and might have been most conveniently carried over one shoulder and under the other. The *torque*, worn around the neck by the Gallic warriors, most frequently of pure gold, and weighing sometimes above four pounds, was of this kind, and was always adjusted to a certain weight as money, in addition to being a personal ornament. One found at Pattingham, in Staffordshire, in the year seventeen hundred, was of fine gold, and weighed three pounds and two ounces. It was four feet long, very bright and flexible, and could be bent round the arm, the middle, or the neck, and extended again to its former shape, with comparative ease. When worn, it was fastened by a simple hook, forming each extremity. Similar ornaments, as bracelets and anklets, are still worn in several parts of British India, which are also of equally fine gold, and, from their extreme ductility, can be wrapped round the wrist, and will retain the position in which they are placed without any fastening. Very magnificent specimens were discovered near St. Quentin, in 1832; they were beautifully wrought, and some weighed over four pounds. They were all without the small hooks at the extremities, their ductility being sufficient to enable the wearer to close them without a fastening. One of these ornaments was found thus closed; but, some antiquarians have thought that they were intended to be worn round the neck, remaining open, in which they differ from the *torque*, which was, in fact, as its name imports, a twisted annula of two or more bars intertwined.

That such ornaments were of very ancient origin, as marks of distinction, insignia of office, *et cetera*, is proved by many allusions of ancient authors, and by passages in the Sacred writings, where one kind is designated *Rabeed*, which literally signifies a twisted chain or wreath, and the Chaldean term *manak* is used to express another similar ornament. After the well-known victory of Manlius over the Gaulish chief, and the capture of his *torque*, which he was allowed to wear, the permission to use such ornaments became common among the Romans, and the "*torquati*" were a conspicuous portion of the Roman army,—forming a kind of legion of honor. The great weight of these *torques* and *manaks*, worn as ornaments, appears extraordinary; but, the examples cited are insignificant compared to the honorary, or rather tributary, *torques* sent to Augustus by the Gauls, which weighed one hundred pounds. Great numbers of these ornaments are mentioned by the Romans as among *barbara spolia*, after their wars with the Gauls and other nations. According to Livy, one

thousand four hundred and seventy-one were taken from the Boii, by Cornelius Scipio, and carried to Rome.

The step from simple barter to that of an inconvenient metallic currency, passing by weight, was an enormous one in the march of civilization; but, the transition from a weighed currency to one formed of positive coins, which were received at once as of a certain value, guaranteed, not by an individual, but by a state, with the national signet stamped upon it to establish and denote that value, was a yet greater step, and formed the basis of the entire after development of the commercial system.

According to Herodotus, the Lydians first coined gold, and the "Parian Chronicle"* records that Phidon, of Argos, first caused silver to be coined, in the island of Ægina. The earliest known gold coins were, doubtless, adjusted to some well-known standard, and, therefore, received the name of *stater*, a Greek word signifying standard. This standard appears to have been of a weight corresponding to two drachmæ of silver, and of the value of twenty. Thus the Greeks, when they first established the use of coins as a circulating medium, perhaps two thousand five hundred years ago, laid the foundation of the forms, sizes, and divisions still found in all the currencies of Europe. Some antiquarians attribute an earlier date to the Persian darics of gold and silver; but, the Greek coins alone furnish a gradual development of the art of coining, from the simple stamping of the lump or button of metal on one side only, through all its phases, to that of the perfect coin, exhibiting the full though gradual progress of the art.

The first species of money that was circulated by tale and not by weight, of which we have any account, consisted of spikes, or small obelisks of brass or iron; six of these being as many as the hand could grasp. From the names of this rude money, were derived the words *obolus* and *drachmæ*, signifying "spike" and "handful," which continued, long after the invention of positive coins, to be the names of two well-known pieces of Greek money, one of which was worth six of the other.

The date of the transition of Greek monetary affairs from pieces that passed by weight, or by the bulk to positive coins of guaranteed individual value, can not be accurately defined; but, as Homer expressly states that an ox was exchanged for a "bar of brass" of certain dimensions, and a woman, who understood several useful arts, was considered of the value of "four oxen," it is clear that a positive

* A series of ancient inscriptions on marble, now at Oxford, probably inscribed in the second century B. C.

coinage did not exist in Greece in his time ; while the allusion in the laws of Lycurgus to both gold and silver coins, proves that they were then in use ; and, it is, therefore, between these epochs that we must place the invention of coined money.

The earliest symbols placed on coins referred to the foundation of a state ; as, for example, the *phoke*, or seal found on the coins of the Phocians, in reference to the shoal of these little animals, accepted as a good omen, as they followed the fleet during the emigration of that people to Asia Minor. On a Lydian coin, the fore-parts of a bull and lion, form the subject of the seal or signet, by which its weight and worth were guaranteed. This type was probably received from Assyria or Persia, where the triumph of the lion over the bull symbolized the triumph of regal power over domestic enemies. The lion also represented heat, or the sun, and the bull, water, or general humidity, an image afterwards adopted by the Greeks to symbolize a river. Homer describes the river Scamander as roaring like a bull. Emblems of the tutelary deities are next found forming the national type.

Coins, from their earliest commencement, not only furnish representations of the emblems of the religious belief of a people, but also contemporary evidence of the state and progress of art from period to period. Take, for instance, the gold coin of the Phocians, frequently referred to by ancient authors, and evidently of the earliest period, probably the middle of the seventh century before the Christian era. On one side is the rude image of the seal exhibited in bold relief, while the other bears merely a rough indent, the mark of the punch, by means of which the lump of gold was driven into the die. The first advance shown in taste and skill is in the form of the punch mark, which is made more regular. The coins of some of the states were impressed with symbols of their deities, or some object sacred to them ; as, Ceres, by the ear of barley ; Bacchus, by the bunch of grapes ; Diana, by the stag. As art progressed, these objects were formed with more accuracy ; and, when represented on the obverse of a coin, in a raised form, they appeared on the reverse as the indented punch mark. As the artist's skill increased, heads of deities were substituted for the rude stones, or *aërolites*, which were first worshipped as symbols of the gods. The heads of deities, with features expressive of their character, were then impressed on coins, while, on the reverse, the emblems take the place of the punch mark. Advancing still farther in art, the full figure of the deity was represented, and on coins are found the full length figures of the demi-gods. The next transition was, adopting the portraits of a sovereign

or prince, with the attributes of some deity. As, for instance, Alexander the Great, with the attributes of Hercules, or of Jupiter Ammon; Lysimachus, represented as a horned Bacchus, *et cetera*. Finally, names and titles superseded attributes. Ptolemy, of Egypt, assumed the title of Setor (Saviour).^{*} As this custom became more common, the title, gods, was added to a coin of Ptolemy and Berenice, which was struck by their son, Philadelphus. From this epithet is traced the origin of the expression, "king by divine right."

The Phœnicians, who were the greatest commercial people of antiquity, had a variety of coins, nearly all of which bore a representation of their chief goddess, Astarte, on the reverse, while the obverse presented the name of the reigning ruler, the date, *et cetera*. Astarte, or Astaroth, was the moon worshipped in the human form, and was to the Tyrians, Sidonians, and other commercial cities of the East, what Diana and Juno were to the Greeks. Her sacrificial rites were not bloody, but consisted in offerings of wines, breads, and perfumes. She was styled "Queen of Heaven," and hence we see the force of the meaning of the prophet Jeremiah, when, lamenting over the idolatry of the Hebrews, he charged them with making cakes for the queen of Heaven.

The type first adopted on coins, was the one constantly adhered to as the most suitable. The so-called ideal representations of the Greek gods are not types, and do not preclude the freedom of the artist, but rather furnish the strongest impulse to new and genial, as well as ever recurring inventions.

The Roman series of coins, which rose as it were, on the ruins of that of Greece, from the number and variety of undoubted portraits recorded on it, is considered of the highest historical importance and interest. Addison calls the Roman coinage a sort of "State Gazette," on which all the truly great events of the empire were periodically published; and when we find such announcements as *Egypta Capta*, on coins of Augustus, struck on the conquest of Egypt, *Judea Capta* on those of Vespasian, issued when Judea was finally subjected to the Roman yoke; or, "*Rex parthis datus*" on the coins of Trajan, when the Roman Emperor gave a king to the Parthians, we must allow the aptness of the term. In addition to the vivid illustrations of history and general civilization which they convey, the coins of Greece and Rome form in themselves a complete history of art. Some coins of the greatest age of Grecian splendor, present works unsurpassed in beauty by sculpture on a larger scale. On the Roman series may be traced the gradual decline of art with the decay of the empire.

^{*} According to Cicero, this word is so significant that it cannot be expressed in one Latin word, and should be read, Saviour God.

The great and varied interest, and the general attractiveness of the study of ancient coins began to be perceived with the revival of learning in the fifteenth century, and small collections were made at this early period; the first on record being that of the celebrated Petrarch, who eventually presented it, with his memorable letter, to the Emperor of Germany. We next find Alphonso, king of Naples, collecting ancient coins from all parts of Italy, which he constantly carried about with him in a richly carved casket of ivory. The great Cosmo de Medici perceived the interest of these beautiful monuments of antiquity, and commenced a cabinet which formed the nucleus of the present magnificent Florentine collection. Mathias Corvinus, king of Hungary, also formed a cabinet of medals about that period. Francis the First, of France, among his other acts of munificence in the patronage of art, laid the foundation of the great French collection, now the finest in Europe.

The importance of the study of coins in a national point of view is now fully understood. The Russian collection, though of comparatively modern formation, already contains some thousands of interesting coins. The Madrid collection, contains 2,672 coins of gold, 30,692 of silver, and 51,186 of copper. That of Vienna is much more extensive, containing 24,112 Greek coins of all metals, 30,902 Roman, and 38,000 of the middle ages. But that of Paris surpasses all others in numbers, and in more than one class; both the rarity and beauty of its specimens are unrivalled.

Ancient medals were in the form of coins, and were struck, either to transmit the portrait of some distinguished person, or to commemorate some great event. The reverses of medals present full-length figures of deities with their attributes, also games, public buildings, and ceremonies of various kinds. Some reverses bear the portrait of the queen, and again, that of the son or daughter of the prince who appears on the obverse.

Medallions were of a larger size, and are supposed to have been struck by different Emperors for their friends, or for foreign princes and ambassadors. The Romans generally stamped the subjects of them upon their ordinary coins. To the figures of the deities with their attributes they added the name. The Greek medallists, with purer taste, gave the symbols only.

Great care was bestowed on the engraving of coin-dies, often in districts and towns not otherwise known as the seats of schools of art; yet during the first half of the third period, from the 80th Olympiad to the 111th, the designs of devices on coins, although often grandly conceived, and full of character, still retained, for the most part, a

certain hardness. In the second half, on the contrary, the highest point that has ever been reached in beauty of expression was then attained, particularly in the cities of Sicily. At the same time, there was great awkwardness in the mechanical process of stamping. The art, however, was much advanced by the prevalent custom of multiplying the already extremely numerous types of coins, by the commemoration of victories in the sacred games, deliverance from dangers by the help of the gods, and other events that admitted of mythological representation, and thus we often find in the smallest compass, a plastic scene replete with ingenious designs and allusions.

The degeneracy of art in the Macedonian dominions, is manifested more clearly in the coins than in any thing else, and at the same time in the most certain and authentic manner. In the first half of the third period, they display, generally, excellent design and execution, such as those of Alexander himself and others, especially those struck in Sicily which cannot be surpassed in handling, and yet are far inferior to other works in power and grandeur. The Macedonian coins from Antigones Gonatus, and the Syrian coins from Antiochus II., downward are of much less value. Even the Sicilian coins of Hiero II., and his family are inferior to the earlier ones. In like manner, among the coins of the Ptolemies, which are not generally of high excellence, the oldest coins are distinguished as the best. Among the coins of the Grecian States, after the time of Alexander, many will be found remarkable for easy and powerful handling, yet none to which can be awarded the praise of genuine perfection in art.

The art of cutting dies notwithstanding the limited fame which these artists enjoyed, even in the chief places where the art was cultivated, was carried by the Greeks to the highest perfection, so that nothing remained to the Romans but to improve the process of stamping. Although the casting of coins was not confined to ancient Italy, stamping was the usual process in Greece and later Rome, and yet the blanks, that is the pieces of metal destined for impression, were cast in molds, commonly of a lenticular form, that they might be the better able to bear the stamp, which was often very deeply engraved. The dies were made of hardened brass, down to the time of Constantine, when the use of steel was adopted. Medals, properly so called, which did not circulate as money, were not continued from the Greek period of art; but the large gold pieces of the Constantian period may be regarded as belonging to that class.

XII. INSTRUCTION IN DRAWING IN SCHOOLS OF ART AND DESIGN.

REPORT OF A FRENCH COMMISSION.

The following article was translated for the Dublin Journal of Industrial Progress from the *Bulletin de la Société d'Encouragement pour l'Industrie Nationale*. (2d Sec. No. 5.) It is part of a Report, addressed to the Minister of Public Instruction in France, by a Commission consisting of Messrs. FELIX RAVASSON, (Inspector General of Superior Instruction,) BRONGNIART, INGRES, PICOT, SIMART, BELLOC, EUGENE DELACROIX, HIPPOLYTE FLANDRIN, MEISSONIER, JOUFFROY, DUC, and PILLET: The Reporter was M. Ravaisson.

All the Arts are learned, more or less, by practice. *Fabricando fit faber*, it has been said, and we may likewise say that Drawing is learned by Drawing.

But if it is certain that like all the arts that of Drawing cannot be learned without practice, does practice alone suffice, without any order or any kind of rule? It has been so pretended in our times, and so also even in the time of LEONARDO VINCI: "Some believe," says he, "that without other science, the practice of copying natural objects alone suffices." But he adds: "There is nothing which deceives us more than trusting in our own judgment without other reason, as experience ever proves, the enemy of alchymists, necromancers, and other simple (self-confident) spirits."

And in fact, how many mistakes of every kind does not practice without any rule, or blind routine, produce, which one must afterwards lose much time to set right? When we walk without guide through an unknown country, on the simple faith of a judgment yet unformed, and directed by nothing, how many chances are there of our losing our way! and, what is worse, having had for a long time no means of perceiving in what we are mistaken, how many chances of our contracting, from a false manner of seeing and judging, some irremediable habit! If, then, it is true that Art cannot be learned without practice, it is also true that some Theory is necessary to Practice to direct it.

"Those who are captivated by mere practice without any science, are like navigators who go to sea without rudder or compass, and who never know with certainty where they are going. Practice ought ever to be built on sound theory; without this, nothing is well done, no more in painting than in any other profession."

It is evident, in the first place, that among all the objects which can be studied, there are some the study of which is more profitable; at least, one of the first rules by which practice ought to be governed, is that which will teach it to what objects it should by preference address itself.

Of all that Nature produces or Art has ever invented, the human figure is that which it is most important to understand well and to know how best to represent, because in Art as in Nature it is to man that the first and principal place appertains. Made, among all bodies, to serve for the habitation and instrument of the Soul, to obey its will and to express its affections, the Human Body is of all that which, in its movements, in its forms, in all their proportions, presents at once the greatest variety and the greatest unity; it is that whose different types are the most strongly marked with a special character, a distinct individuality that, in fine, which is susceptible of the greatest Beauty. From this it results that errors in the representation of the human figure are more sensible than in that of any other figure, and that he that commits them recognizes them himself more easily. From hence it follows that to teach how in all things to judge of their proportions

accurately, that is to say, as we have said, to Draw, there is nothing better than to propose, as the first object of study and imitation, the human figure. It is a point upon which scarcely any difference of opinion exists.

But because the human figure is the most complicated both in its movements and in its forms, it follows also that it is of all figures the most difficult to see well and to represent well. In living nature, where to the variety of forms is added that of colors, and the mobility inseparable from life, the complexity is such that it is manifestly impossible for a beginner not to lose himself in it. Hence the necessity upon which all the world, or all but all, is again unanimous, of a simplification at first, of that which consists in giving as a model not nature itself, but an image of nature, without motion and without color; that is what is ordinarily called a *bosse* [a statue, cast, or figure in full relief.]

But does not such a figure, if it be an entire figure, offer still a whole composed of too many different elements, whose relations it is impossible for an inexperienced eye to seize and reproduce? Upon this point again, upon the impossibility of giving to the beginner an entire figure for model, no difference of opinion.

Now, there is one part of the human figure in which more even than in the remainder, the proportions are skillful and delicate, which more than all the rest possesses individuality of character, which, in fine, is susceptible of a beauty more exquisite than all the rest, and which beside forms in itself in some sort a whole, already sufficiently complicated and difficult to understand. This part is the Head.

The least simplification which it would be necessary to make, the least restriction to the hazardous essays of a blind routine, would be to give at first as models only round casts (*bosses*.) and among these only those of simple Heads.

Must we not go yet farther? Must we not give beginners for their first models, instead of round casts, prints, drawings, or photographs, where the visible appearances are more easily distinguished from the real proportions which they express, where the lights and shades are more simple and more easily understood; must we not also, instead of entire heads, make them imitate at first only the parts of which the head is composed? It is this opinion which in all times has obtained greatest credit; it is this which in all times has been generally practiced, as witness the writings of CENNINO CENNINI,* LEONARDO DA VINCI,† BENVENUTO CELLINI,‡ VASARI,§ LONCAZZO,|| ARMENINI,¶ DE PILES,** &c., as prove the collections of the *Principles of Drawing* which have been published at different epochs.†† In fine, it is this which is practiced still in our own times in the greater part of the schools, one may even say in almost all.

From all time then this principle has been generally held as true; that it is only after having learned what is easy and simple that what is difficult and complex should be attempted. On this principle the student imitates drawn or engraved figures before those in relief; the parts of a figure before the entire. Moreover, he applies himself to imitate exactly the form of whatever subject he studies, and consequently to represent with care the lights and shades which render it visible, and which determine the relative inclinations, the melting away or the relief of the surfaces.

It is complained that by this method, proceeding step by step from the imitation of the several parts of the head, after prints, too much time is required to come to the imitation of heads and entire figures from the round; it is also complained that too much time again is spent in making each drawing in the imitation of the lights, of the shadows, of the half-tints; that amidst the minutiae of this labor a vicious habit is contracted of pre-occupying one's-self to excess with details,—a habit which no longer allows one to comprehend the effect of the whole. It has been said, in short, that the result which we ought to propose to ourselves is that of

* *Trattato della pittura*, (Roma, 1821,) 8vo. c. 8.

† *Della Pittura*, p. 57.

‡ *Discorso sopra i principi e'l modo d'imparare l'arte del disegno (opere)*, Milano, 1811, 8vo, volume iii.)

§ *Introduzione alle tre arti di disegno*, c. 15. *Vita di Michelagnolo Buonarroti*, p. 129.

|| *Trattato della Pittura*.

¶ *Preceiti della Pittura*. c. 3.

** *Elements de peinture pratique*. P. i. c. 1.

†† See especially those engraved after the designs of Palma the younger, of Prospero Fontana, of Annibal Carracci, of Guercino, &c.

leading the student, in the least possible time, to reproduce the effect of the whole and the general aspect of things, and that after several years even employed in the patient study, beginning with the elements of the human figure, one can scarcely hope to reach such a result.

Hence the different systems in which drawing is commenced by the imitation of heads in full relief.

In the boldest of these systems such models are given to the student for imitation from the very first, and without assistance. This is what JACOTOT, the author of what is called the "Universal" system, proposed as an application of his general views toward the simplification of instruction. Experience has proved, as it was easy to foresee, that a head in full relief,—that of the Apollo Belvedere, for example,—proposed as a first model to all beginners, offers them, by its multiplied proportions, complicated by so many mysterious effects of perspective, and light and shade, absolutely insurmountable difficulties; they either lose courage entirely, or else passing on to another work, in spite of the gravest errors, which they are utterly unable to correct, they take up forever the ruinous habit of doing bad work and remaining content with it.

In the system proposed by M. ALEXANDER DUBUIS, more than twenty years ago, a system which has gained considerable support, and which even now has its partisans, the first model proposed for imitation is still a head in full relief, but it is a head simplified.

By this means M. Dubuis has hoped to preserve the advantages which JACOTOT promised himself by his plan, and to get rid of its inconveniences.

Accordingly, M. DUBUIS gives beginners for their first model a bust which presents only very general masses or features; after this bust, another, which offers some additional indications of the head; then a third in which the details are still more numerous and more decided; and lastly, a fourth, which completes the series, and which alone is all but according to nature. These four busts (of which each is, besides, placed in three different positions: the head set straight in the first, raised in the second, but down in the third,) these four busts thus present four successive states of the same figure, from the roughest sketch up to the completion of it; they are the degrees by which the author of the system proposes to conduct the student, from the general indication of the whole to complete representation, comprising all the detail of the parts.

So that, says M. Dubuis, while commencing Drawing by the entire Head, by a whole, as in M. Jacotot's method, and in all the methods by which it has been sought to abridge the study of Drawing, we commence, however, by a simple and easy object, and only pass in succession, as in the ordinary method, though following indeed an inverse path, from the simple to the complex and from the easy to the difficult. Besides, thinks he again, to proceed thus is to proceed in conformity with the great principle, that general effect should command the details, and that, accordingly, every work of art should commence by the general effect of the whole.*

In truth, if the different parts may be called simple in relation to a quality, and it is in this sense that the limbs are simple in relation to the body, we may from another point of view consider as simple, in relation to an object completely determined, a less determined state or condition of that same object, and one which consequently presents less complexity; and it is in this sense that the rough sketch of a figure, in which as yet the individual features find no place, is more simple than the finished figure. Now this previous and simpler state is often called, elliptically, the whole; elliptically, for it is not the whole with all the parts composing it once realized, and which themselves in reality form a whole; it is the whole without its parts, the general effect abstracted from the details, or, if you please, the general effect comprehending the details in a manner purely virtual and ideal.

But the character of this whole abstracted from its parts is: to be in relation to the real whole of which it is the sketch, still undetermined, indefinite. Hence it follows that, for him who does not know the details which the abstract whole in its general effect comprehends but virtually, this whole has but an undetermined meaning; and an undetermined meaning is not one at all. To give a beginner

* *De l'enseignement du Dessin sous le point de vue industriel*, par Dupuis (Paris, 836, 8vo,) p. 29.

such a whole is then to propose to him a model which for him is meaningless. Such a model has, consequently, nothing in it proper to teach the imitator of it exactness and precision, and—the habit once engendered at starting of doing nothing save roughly, and then only almost doing it—when the student gradually arrives at details he will be able but roughly and only almost to comprehend and represent them.

Doubtless whatever one desires to do it is the general effect, it is the whole, the whole without the details of the parts, which must first be established; for it is this whole, in which the parts will successively take their proper places, which must first be correct, and the happiest details cannot compensate for errors in it; this is what LEONARDO DA VINCI incessantly advises Artists not to lose sight of.

It is, in fine, a truth with which the Greeks particularly showed themselves profoundly penetrated; for if there is one quality above all by which their works most surpass those of the moderns, it is in the understanding of the general effect. But it is not less true that this general effect of the whole without parts, by which everything to be done must necessarily be commenced, has no meaning, save by relation to the complete whole, of which it is the preparation and first stage. For the artist who indicates it and who knows what he must add to it, this first general effect (*ensemble*) has then a definite sense, and from this it follows inevitably that the sketches of a master, even the most summary, instead of being confined to a generality systematically shapeless, always here and there let out the determinate, precise, and well defined ideas of which they are the design. But those indications themselves, to an inexperienced eye, are but enigmas. The sketch, in fact, has a meaning only for its author, and for those whom experience and science have put into a condition to share his thought, and to anticipate with him its realization. For a beginner it has no meaning, or only a vague and confused one. To propose it to him for imitation at starting is then, once more, to give him for his first lesson to content himself with an ill-defined meaning: it is to make him contract the habit of doing so; it is to deprive him, by such a habit, of the desire, and soon even of the power, to reach as to any object whatever the definite and determined, that is, the reality. From which it is evident, that while in everything it is by a sketch that what is desired to be done must be commenced, it by no means follows, as M. Dubuis has thought, that the first models should be sketches. Far from this, to habituate one's-self from the start to imitate objects systematically undecided and shapeless is to render one's-self incapable of ever understanding the real forms, and therefore of ever being able to make a simple sketch, such at least as those which come from the hand of a master, and in which, little as there may be, or be seen in them, at least what ought to be is already distinguishable.

However, it must be agreed that the models proposed by M. Dubuis do not present that appearance of vagueness, which is in general the character of mere sketches; this arises from their being fashioned out by planes and by angles. The first of these models presents but the great masses thus indicated; the second only differs from the first, and the third from the second, by the planes and angles being more numerous; and even the last, which approaches nearest to the forms of nature, still retains much of this same character. In this above all, these models differ essentially from the works of a master's hand, and they resemble more closely the successive stages by which the workman or stonecutter mechanically nears by little and little the shape of the marble or the model, which the artist has charged him to reproduce.

The object of the constant reflection of the Masters, the end to which they ever look, being, as we have said, the expression of the character or soul of forms, their constant practice has been to indicate it from the very first, even in the lightest and most fugitive sketch, and accordingly, in sketching the figure of a living being, and above all, the human figure, from the very first to make felt the nature of those sinuous curves or *serpentine*s, (as Leonardo and Michael Angelo called them,) which are its peculiar characteristics, and which reveal its spirit. This is what we see in the drawings of Titian, and of Correggio, as well as those of Raffaele, of Leonardo da Vinci, of Fra Bartolommeo, and of Michael Angelo, as well as in the sketches in wax, and in clay, and even in marble, which remain to us of this great artist.

An entirely different manner has begun to reign in certain schools in the 17th and 18th centuries, according as the true sentiment of the spirit of forms became more weak ; it is that which consists in replacing curved lines and surfaces by straight lines and planes ; confined at first to the detail of figures, to the smallest parts composing them, this process has been more and more applied to the larger parts, and finally, in our own time, among many draughtsmen and painters, it has extended itself to every branch of Drawing.

The mode's proposed by M. Dubuis present a systematic application of this process, one of which beginners who copy from them must necessarily contract the habit.

Now, in the first place, habituated to see everything under one sole aspect, the eye must by little and little become incapable of understanding the infinite variety which nature offers us ; it must become incapable, above all, of understanding, and of representing those subtle and winding forms which are the distinguishing characteristics of human nature, those forms which Michael Angelo compared to the waving motion of a flame. In the second place, the particular effect of this process which consists in expressing every thing, or almost every thing by planes, is to disguise under the precision of surfaces so regular, the actual indetermination of forms, and so to give to the unskillfulness of him who does not know how to distinguish, and to reproduce the true character, a false air of knowledge. Thus the inconveniences of this method are aggravated.

If by adopting the habit of copying simple sketches, such as (once more) the sketches of the Masters, we can express nothing but in the rough, and only half express it even so, if in consequence we do not reach the truth at all, we are in this properly speaking, engaged in the false, and the very indetermination at which we stop short, might warn us that to reach our end, a part of the road remains to be traversed. But if we adopt in addition, a manner of work which gives to every thing we do a semblance of precision and perfect definiteness, we conceal from ourselves our weakness or our ignorance, and we set a bound to our own progress almost impossible to pass over.

M. Dubuis' method was conceived for the purpose of teaching the art of Drawing to the working classes ; to those classes who have need of an elementary knowledge of Drawing, in the exercise of a multitude of professions, more or less mechanical, and who can devote but little time to acquire it ; and it seems sufficiently appropriate for this purpose. If, in fact, it follows from what we have said, that this method can not lead very far, on the other hand, it is undeniable, that in making the student begin by the imitation of simple wholes, it is, perhaps, fitted more rapidly than any other, to put him in a condition to seize the general effects of proportions, and to put the principal masses almost in their proper places ; and if it is not enough for Art, it is enough for what of knowledge of Drawing most trades require.

This method, once more, may then answer sufficiently well for the instruction of the artisans for whom it has been designed, but that is no reason why it should be introduced, as some have desired it should, from these popular schools where it is said to have done good service, into the schools of a superior class, and above all into the *Lycées* [Colleges, or Collegiate Schools.]

However, if it be a method by which we can indeed acquire more rapidly than by another, a certain knowledge of Drawing, however limited, perhaps we should be tempted to believe, that it ought to be adopted in preference by all our schools, except those especially destined for the formation of Artists. Every where, some will perhaps say, it is for the greatest number, and especially for them, that we should chiefly be concerned ; now the greatest number has need of knowledge of Drawing only of a very elementary kind, so far as it is required, not for the practice of the Art, but for the different industrial pursuits with which Drawing has something to do. What is of the greatest importance is this, that those very persons who can devote but few years to general study, and to that of Drawing in particular, should be able in those few years to learn as much of it as is necessary for representing with some accuracy the situations and dimensions of things ; and if it be a method by whose employment such a result can be reached, even if it cannot serve, nay, even if to a certain point it interposes an obstacle to further progress, this imperfect but expeditious method must still be preferred.

We cannot share in such a view.

Even admitting what is far from being incontestable, that for the practice of the different branches of Industry, there is never any need of drawing with the same precision, and the same delicacy, with which artists must know how to work, it is still one of the first interests of industry, and consequently of the great number who are engaged in it, that art should not decline in the hands of those at least who practice Art. It is from Art that all the branches of Industry which have any relations with it, receive their inspirations. It is Art which supplies them with the types which they multiply, in accommodating them to our different wants, or to our different fancies. All are constantly occupied in appropriating to every thing that surrounds us, the forms with which the imagination is captivated, and of which that Art which reigns at each epoch is the source; all profit by the power of seduction which Art exercises, and by the favor which attaches itself to every thing that bears its mark.

When a great master appears, and comes to show all things under an aspect till then unknown, for such is the privilege of genius, all that is subject to the power of man, must put on those proportions, those new harmonies which he is come to reveal. Thus to spread and to apply its thought in every form, the ancient arts are transformed and regenerated, and new arts take birth. And to this immense work come together, yet from afar off, to furnish its materials, even the very branches of industry, which seem the most foreign to the Art of Drawing. Who can say what even the most mechanical professions owe to the genius of a Raffaele; not only the art of Marc Antonio, not alone that of the potters of Faenza, of Gubbio, of Pesoro, and of Urbino, not alone the fabrics of the tapestry works of Flanders, and the enamels of Limoges, which have reproduced his creations under so many forms, but all the industries of his age, and of the ages which followed his; how many men have lived on the fruits of his thoughts, and of what riches of every kind it has been the source? Who can calculate what for three thousand years, one half the universe owes to that Greek Art from which even still, though modified by so many different influences, not only the forms of all our public works, but those even of our vessels and commonest utensils are derived?

And as for the industry of France in particular, if it be by so many titles in the first rank among the industries of Europe, to what is this due, if not to this, that the first rank already for a long time belongs to our painters and our sculptors, and that in Art, no more than in Literature, no nation can dispute it with her?

What worse service then would it be possible to render to the greater number in every country, but above all in ours of France, than to put every where in force methods of instruction calculated to set bounds, even to the measure of mediocrity, to the development of talent, and by an ignorant zeal for the crowd, to arrest the flight of those men of rare genius, (*génies d'élite*) which it ever conceals in its bosom, and whom Providence destined to be its benefactors?

Will it be said, that rare Genius knows how to burst its way, whatever difficulty it encounters, and that it is useless to take special care of it? Examples abound in history, and in the history of art in particular, of men of genius happily endowed, whose career has been falsified, and destiny destroyed by a bad education.

In the second place, and supposing even that one should not occupy one's-self with this small number, with this *élite* which will practice Art with success, and spread its benefits over the crowd, nor even with those already more numerous, to whom it would be useful, in the career which they have to pass through, to possess the knowledge of Drawing to a somewhat higher degree, it is certainly important that among the greatest possible number taste should be healthy and good. And so, if the state of Art, and consequently of all the industries which depend on Art, depends upon the genius and education of artists, it depends also, in very great part, on the judgment of the public, which, by its approbation or disapprobation, may sustain the artists in such and such a course, or turn them from it. Now, as PAUL VERONESE said, "those alone can form a good judgment upon matters of Art, who have been well instructed in Art." Accordingly, since taste is the just appreciation of the beautiful, since between the beautiful, the true, and the good, there is a close connection, and so to speak, an intimate solidarity, what interest is more general, than that to direct instruction in Drawing,

in such a manner as to give as much as possible to all those who take part in it, a just and delicate taste, a sure discernment of beauty? If that is true for all the schools, for how much stronger a reason is it not true for the schools of secondary education, and where those are educated, who by their lights, as well as by the place which they will occupy in our society, are destined to exert the most powerful influence upon the spirit of their time?

For these different reasons, we cannot recommend the establishment in our *Lycées* of any of those expeditious methods which lead, however ingenious they may be, but to an inexact and erroneous appreciation of forms, and their character. The only method which we can propose for the approbation of the Minister, must be that method which will lead, though at the price of a little more time and trouble, to the end of Instruction in Drawing, such as we have been able to define it, after the great Masters of Art; the possession of that good judgment of the eye, by which men appreciate proportions correctly, and understand their spirit and beauty.

We have seen that the human head is an object too complex to serve for a first model for the student, that in seeking from the start to imitate its forms, the beginner can but contract a habit of error; we have seen also, that to propose for a first model, a whole in an abstract form, and without parts, is again to teach, though in another fashion, but error and confusion.

Hence, we are of necessity brought back to the method which has almost always prevailed, and which confirms the authority of all the masters of Art, that which only allows the whole to be studied, after a profound study of its parts.

"The sight," says LEONARDO DA VINCI, "has an action of the quickest, and embraces in one moment an infinity of forms, nevertheless, it only comprehends one thing at a time. Let us suppose, reader, that you bestow one rapid glance on all this written page, you will judge in an instant, that it is full of different letters; but you will not know in so short a space of time, what letters they are, nor what they mean; you will be obliged then to go over them word by word, line by line, in order to comprehend those letters. Or again, if you wish to reach the top of a building, you must mount up step by step; without which it is impossible for you to reach the top. And so it is, I say to you, that Nature regards this Art of Drawing. If you wish to have the true knowledge of the forms of things, you will commence by their parts, and you will not pass on to the second, before you have the first well in your memory and in your practice. And if you do otherwise, you will lose your time, or at least, you will prolong your study. I repeat to you once again, learn accuracy before rapidity."

But it is said, on the other hand, if we cannot begin with the Whole, why not descend to details still smaller than those by which one generally commences, why not descend to the fingers, to the nails themselves.

It is, because, in recommending not to begin with the entire of a visible natural object, nor even by a whole, such as the human head, too complicated still, although this too is but a fragment of a whole, nevertheless for an inexperienced eye, in order to satisfy the two principles equally certain as they are that we can not commence with a very complicated whole, and that only a whole can make itself understood, reason requires that we should commence with parts, which, though parts, yet form wholes in a sense in themselves, and are in consequence intelligible objects. We will stop then, as men have always done, at those fragments which have to a certain extent a special destination, a special character, a distinct individuality, such are the eye, the ear, the mouth, the head, &c. Sufficiently simple not to surpass the comprehension of a beginner, every such part is already a whole in itself, in right of this quality, and like a whole, each such part may be understood by itself alone. As parts of a Whole more complicated, they cannot, it is true, be understood without that whole. It is then by arriving at that Whole in which they act one with another, and where they harmonize together, that—after having studied each part separately—they can all be understood.

After having taken as a base of operations, as we do in every science, that which is less intelligible in itself but more accessible, it is in the last place, according to the order which befits our weakness, and which is recommended by

wisdom, that we raise ourselves to the culminating point of complete science, which is like an elevated pinnacle, whence we can embrace all, and understand all.

Lastly, to leave from the very start, only so much obscurity around the meaning of the several parts of the human figure, as the time is not yet come to clear away, we should not neglect to make beginners see from the first in a general way, the relations they bear to the whole, and the position which belongs to them. It is also thus, that in every science a general and preliminary exposition precedes instruction in detail, and prepares the way for that last and philosophical exposition, in which the details reunited and arranged in the whole, will receive their last and full explanation.

Such is then the order which theory prescribes to the practical study of Drawing. But the determination of this order, is this the only share which theory should have in instruction? And accordingly, the order of practical study once determined, is it enough for the learning of the elements of Drawing, that this study should consist in commencing with the imitation of the parts of the head, and finishing with that of the entire figure?

[After having demonstrated, (continues the Editor of the *Bulletin*), by the reasoning and by the authority of Leonardo da Vinci, of Michael Angelo, of the artists of antiquity, &c., the necessity of the study of the anatomy of the bones and muscles, and that of the proportions, M. F. RAVAISON proceeds as follows:—]

In fine we have seen above that Drawing is properly speaking the representation of the proportions of things as they appear to the eye. We have also seen, that if we can hardly well judge of the reality by the visible appearance, which is for us its sign, we can hardly see the appearance either as it is. Hence, constant difficulties, as well when we invent, to give to the things we imagine the forms they ought to have, as when we imitate, to judge accurately of the appearances of things and to reproduce them faithfully. Hence an uncertainty from which we can scarcely escape without many errors.

Now the relation between visible appearances and actual proportions, for any point of view and any distance, is regulated by geometrical laws; by these laws, which are those of perspective, we can with certainty anticipate experience, and without error, destroy the appearance of the reality, or the reality of the appearance. Who then can doubt, that the knowledge of it would be most useful to assure the judgment of the eye, and to protect it from error? And so, at the era, at which the art of Drawing among the moderns has attained the highest point of perfection, we see perspective held in honor.

After Brunelleschi, Paolo, Uccello, Lorenzo Ghiberti, who were the first to understand well its rules; after Pietro della Francesca, who was, it is said, the first to give the theory of it, the masters whose works adorn the middle and second half of the 15th century, Massaccio, Filippino Lippi, Pisanello, Signorelli, the precursor of Michael Angelo, Melazzo de Forli, whose frescoes probably taught Corregio the art of backgrounds, (*sotto in su*) Vincenzo Foppa, the two Bellini, Mantegna, Ghirlandajo, Perugino, showed themselves consummate in the new science; Leonardo da Vinci made it the subject of a book, now lost, which became the source of the principal works in which it was treated in the 16th century; Raffaele, in fine, to whom Perugino had taught it, knew it so well as to give lessons to the great Florentine painter, Fra Bartolommeo. And we cannot doubt, that the knowledge and habitual practice of perspective, effectually contributed to give to the art of Drawing, among the painters of the golden age of Art, much of that exquisite accuracy, and accordingly, that finished elegance, from which men subsequently receded more and more, according as counting more for the concealment of mistakes on the play of light and shade, and the effect of aerial perspective, men trusted more and more to the unassisted judgment of the eye.

It is not that when we learn to draw, we must frequently put in practice the rules of perspective, to find the place and dimensions of outlines and shadows. We have already said, that to construct forms by geometrical rule, is no longer to draw, but to trace them, and consequently it can not teach us to draw. But at the same time that it furnishes us with an exact means of geometrical construction and verification, the knowledge of the principles of perspective, united to the habit of applying them, must necessarily, in making us attentive to the perspec-

the diminutions of proportions, and the laws which they follow, lead us to observe them better, to appreciate them, and to represent them more justly.

Now if the knowledge of perspective serves to make us judge well of all visible forms, of those of the bones and muscles, as well as those of the exterior surface, does it not follow, that it is with perspective that instruction in Drawing ought to commence? Practice should be founded on good theory, of which perspective is the entrance and the guide.

Will it be objected that it prolongs too much the teaching of Drawing, to join with it that of perspective, as well as the structure and proportions of the human figure? Very far from this, these are ideas which at the same time that they must throw light on practice, and so render its progress more rapid as well as more sure, may be acquired in a time relatively very short. These principles, says LEONARDO DA VINCI, who continually recommends to begin with the study of the scientific principles of Art, these principles are but a little thing near Art itself.

To learn in the first place, perspective; in the second place, the structure of man and his proportions; in the third place, only to draw the human figure; first, the several parts, and then the whole; such then is the order prescribed by Leonardo da Vinci for the study of Drawing, and which has not ceased to be the order most profitable to follow.

This does not, however, prevent the teaching of the scientific principles of Art from being usefully preceded by a certain number of lessons, consecrated to purely practical exercises, exercises which may consist of the imitation of simple figures, such as those of regular solids, of some parts of vegetables, &c. In these first essays, we would accustom ourselves to draw the outlines, to indicate the shadows; we would accustom ourselves, above all, to observe proportions and forms, and the very difficulties themselves which we should experience in judging of them accurately, and reproducing them well, would dispose us to recognize the necessity, and to comprehend the use of those principles, whose methodical application will serve in the regular course of instruction, to resolve successively the various problems of Drawing. These different exercises would thus form a sort of preparation for the regular course of studies, which would commence with perspective.

In our schools, (*lycées*) where for every reason the instruction must be but very elementary, the study of perspective will be necessarily confined to general principles, and to the applications most useful for the practice of Drawing. Care should be taken above all to explain how this science, which is at present scarcely applied save to the foreshortening of regular forms, which can be geometrically drawn such as those of a building, may be applied alike to every kind of forms, and particularly to the human figure.

The study of measures (and proportions) should extend only to those which it is most important to know, and which are the most constant; and the master should apply himself to explain by examples chiefly borrowed from the *chef-d'œuvre* of antique art, how the infinite variety of individual forms reconciles itself with the general rule, which is the law of species. The study of the anatomical structure also should be limited to what is most necessary to know, and what may be learned from casts, prints, or photographs, upon the situation and functions of the muscles and bones.

But, on the other hand, it would not be enough for the scientific principles of Art, that some lessons more or less abstract, should precede the practice. In Art practice is the end, theory is one of the means of reaching it. From the start, theory ought then to be accommodated to practical use, and practice ought to the end be enlightened by theory, and incessantly take counsel of it.

Consequently, when the principles of perspective are explained to the Students in our schools, care should be taken to make them sensibly understand those principles, by exhibiting to them, and causing them to make for themselves immediate applications to objects analogous to those which a little later they will have to draw. And on the other hand during the course of practical study, and throughout its whole continuance, no occasion should be neglected to make them see how the problems offered to the eye by the foreshortenings, implied by relief, in every object of nature, all range themselves under the general laws of perspective, and how it leads to resolve them. It is thus that throughout all instruc-

tion in Drawing, the maxim is verified, that "Perspective is the bridle and helm of painting."

In the same manner, in giving the necessary instructions upon the anatomical structure of Man, as applied to the Art of Drawing, and upon his chief proportions, care should be taken to make it clear from the very first by examples of its practical usefulness. Afterwards, as fast and according as the student is made to draw the different parts of the human figure, or even entire figures in different movements and attitudes, he should be made to study it anew, more deeply, and in greater detail, and as well structure as proportions. For this purpose no mode perhaps is better than that proposed by Alessandro Allori, and which was but the application to Instruction in Drawing of the ordinary manner of proceeding adopted by Michael Angelo; a mode which consists of either before making the student draw each part of the body as it is in outward form, to make him first draw the bone which it includes, and then the muscles or cartilages which are covered by the skin; or at least occasionally, to place by the side of the models after which the superficial figures of the objects are to be reproduced, the representation of their anatomical structure, a representation, which in part explains their appearances, and which thus leads the student, as in other respects the knowledge of the laws of perspective leads him, to understand them better, and therefore to draw them better.

In anticipating experience, according to an expression we have borrowed from Leibnitz, science reduces the probabilities of error, which experience always allows, and lets none of them exist, as has been said also of wisdom in respect of chance, save what cannot be taken away. This is also what the previous study of the Parts does in regard to the study of the Whole. The parts once well known in their constituent elements, in the chief varieties of form and under the different aspects which they can present, when we come to the whole we half know it already, and familiarized with elements analogous to those of which it is composed we understand it better and represent it better. It is, therefore, as we have said, that the parts must be studied before the whole; it is, therefore, also that there is no use in studying them unless we study them profoundly, so as to know them well, and that, consequently, "we must not pass from a first to a second unless we are in possession of the first."

From this, several practical consequences follow. In the first place the parts of the human figure ought to be, in general, as well in models as in the copies which the students are caused to make, of equal dimensions with nature, or at least very nearly so; for in objects of small size one is more exposed to miss seeing all, and for the same reason, "in little things one does not see his own faults as he does in greater."—Once master of the detail of the parts, we may, on the other hand, when we come to draw entire figures, give them without any inconvenience, smaller dimensions. In drawing such figures, in order that we may keep the different parts of the copy we are making in proportion one with another, we must embrace the whole of it at a single glance; and the custom has very reasonably grown to be not to give the drawing of the entire figure dimensions greater than those of an ordinary sheet of drawing paper. There is something more; these dimensions are those ordinarily given to the models themselves; now, since we learn to draw only by the judgment which we apply to the relations of dimensions or Proportions, and as, consequently, it is important that beginners should not be able to contract the habit of taking measures on the model to dispense with that judgment, it is a useful thing to practice them in giving to their drawings, representing entire figures, dimensions different from those of the models from which they copy. It will then be proper, if the models in general are only of the size of an entire sheet of paper, to make copies from them occasionally of a smaller size. But for this reason, that in little things one cannot well judge of his own faults, and that the student may not become accustomed to content himself with inexact imitations; the dimensions of drawings of entire figures ought not, in any case, to sink lower than those of a half sheet of drawing paper.

In the second place, objects are only well distinguished by their lights and shades, which render sensible their relief. If the line which marks the extreme limits be sufficient to represent the figure on a smaller scale, and to secure its recognition, it is but by the lights and shades presented by its surface that we can

understand exactly and completely its proportions, its character, and its special beauty. In order to fulfil the precept according to which, in all the course of his studies, the student must not pass from one object to another until he understands the first well, it is therefore necessary that in respect of every object he draws, from the most simple parts to the most complicated whole, he should not confine himself to a line, nor even to a rough indication of the model, but he must apply himself to reproduce, and to reproduce exactly, the lights and shades.

"If you wish, oh draughtsman," says Leonardo da Vinci, "to make a good and useful study, judge well among the lights which are those, and in what number, which possess the first degree of brightness, and so among the shades which are those which are darker than the others, and in what manner they mingle together, and compare these always one with another; and lastly, let your shades and lights be joined without lines or points, and mix with each other like smoke. And when you shall have brought your hand and your judgment to this amount of exactness, the practice of drawing will come to you so fast that you will not even be conscious of it."

To express the exact character of the shadows with the same pencil which serves to mark the outline, to render it with softness, and, according to the Italian expression *sfumato*, by parallel, or crossed shading, great labor is required, which occupies much time. With a stump both the shadows, and, the passage of the shadows into the lights, can be imitated both more easily and more quickly. It would seem then, and it has been proposed, to prescribe the use of the stump rather than that of the pencil for the imitation of the shadows.

The Commission is nevertheless of opinion that for teaching, and in order to form the eye to judge well of forms and their character, the pencil is preferable to the stump. The pencil represents shadows by simple lines. These lines according to the direction in which they are traced, may contradict the forms whose relief they should serve to express, or, on the contrary, by conforming themselves to these, may assist, by their very direction, in making them better understood. To put in the shadows with the pencil, the general effect and the details of the forms must be then observed every instant, as well as the changes which they undergo by foreshortening. Each line, each shading becomes thus a teacher of the character of things, of their anatomical construction, and of their perspective. This is what we are shown by the drawings of the best painters, and the prints of the best engravers, with whom to put in the shades is never any thing else than to draw. Moreover, we have not stumps always by us; and on the other hand we have always at hand a pencil, or a pen, or something which can take its place and perform the same office. It is important, on principle, to learn to make use above all things of those means which are least likely to fail us, and to know how, in short, to paint the shadows with the same point which serves to make the outline.

If then the use of the stump may occasionally be permitted, if it be even useful to learn in good time to manage it, were it but to make one independent of every process and special mode of working, still the habitual instrument, and especially at the start, should be the pencil.

From all that precedes, it follows that the object we should propose to ourselves in indicating the shadows is, not so much to please the ignorant or ill-taught eye, by the regularity of the work, as to express in a manner as perfect as possible the figure and character of the objects drawn. In this manner by devoting to the study of the model and to the light and shade all the necessary time, the greatest part of the course will not be taken up, as often happens, in the minute imitation of the works of engravers. Besides, once that we have become, by sufficient practice, able to express the half tints completely, in the absence of which the lights and shadows do not possess their true character, but which form the most difficult part of the study of the model, and that which requires the longest application, we can, without omitting them, spare ourselves, nevertheless, the time necessary to represent them well with the pencil. For this it will be sufficient to draw on a ground by whose tint they are supplied. This is what was done in the best times of Art, by using for drawing paper, paper slightly colored, upon which the shadows were indicated in black, and the brighter lights in white. And according to Leonardo da Vinci, who managed the pencil as well as the pen

with astonishing dexterity, this is in fact, the best method to draw from models in relief.

We have seen that it is by the separate parts of the human figure, and not by the whole, that a beginning should be made, and for this reason, that in all things the path which ought to be chosen is that which leads from the simple to the complicated. For the same reason, the first models should not be reliefs, (round figures,) but imitations of relief in the flat. "Begin," says Leonardo da Vinci, "by copying the drawings of good masters, you may afterwards copy from figures in relief." Drawings, indeed, or prints, or even photographs, do not offer effects of perspective so deceptive or so enigmatical as those given by reliefs, or round figures; the lights and shadows in them have not the same magic, and allow of being more easily understood. And in fine, the very labor by which the author of the drawing or print has imitated the relief or round, is, for him who seeks to imitate it in his turn, a necessary imitation in the different works of Art. Figures in relief (in the round) should not then be drawn until the student is in a condition to reproduce drawings and prints with sufficient accuracy.

Those drawings or prints, whether they represent the parts of the human figure or entire figures, ought to be the faithful reproduction of types borrowed from the best masters of all times. Photography, too, may come to the assistance of the pencil or the graver, not only in the multiplication of drawings of good authors, or of rare prints, but also even in affording direct reproductions of masterpieces of painting or of sculpture, or representations of nature.

As to models in relief, (figures in the round,) it is among the *chefs d'œuvre* of ancient sculpture that they should almost all be chosen.

Under the influence of systems in error both as to the object and the aim of Art, a custom has become established of selecting almost exclusively, as models for instruction in drawing, among the specimens which remain to us of the ancient statuary, figures of the class called ideal figures, in which it is believed may be found the representation of human nature in its most abstract generality, figures possessing the least individuality possible; without perceiving that of these figures, those which are more remarkable for the regularity of their forms than for their truth are, for their most part, copies or imitations in which the particular character presented by the originals has more or less disappeared, and their general proportions only remain,—it is to such second-hand works that the preference is often given. And from this it arises that in learning to draw, one learns to regard only a conventional type of forms and movements, and one becomes incapable of comprehending the infinitely varied beauties of nature.

In consequence of the discovery made at the beginning of this century of a great number of original works of the finest period of Greek statuary, a discovery which vividly affected the imagination of men: in consequence also of the reaction in an opposite direction which was naturally produced by the insipidity of so many works inspired by the worship of a false ideal: the opinions which used to govern the domain of art, and that of criticism, have become modified. Individuality, Truth, Life, are restored to their rights; and it may even be doubted whether, after, having so long inclined towards one of the two poles between which modern art has almost always oscillated, we have not now thrown ourselves too far in the direction of the other.

However this may be, elementary instruction has continued almost everywhere to follow the same errors as before. To cut this short it has been proposed in the commission, to allow no models in future to be taken, among so many works of ancient sculpture which remain to us, but those which carry to the highest pitch the character of individuality and truth: that is, the Portraits.

The Commission has come to the conclusion, that if this proposition should not be admitted because it is exclusive in its turn, that if, on the contrary, we can not too soon place before the eyes of youth the *chefs d'œuvre* in which the human form, the most perfect of all forms in nature, has been represented in its highest perfection, and thus penetrate their still young imaginations with the principles and essence of the most excellent beauty, nevertheless, in order to teach them to understand and love nature in her inexhaustible variety, it is well to give them also a certain number of masterpieces of another kind to study, so as to reproduce, from the very first, those masterpieces in which Art has expressed with the greatest *raîeté* the beauties proper to individual types the most special and peculiar, without seeking to reduce them to a higher Beauty.

Moreover, those very figures should be selected which can, in a certain sense, be properly called ideal: the figures of gods, of goddesses, of heroes, of heroines, among the works of the best ages, in which the masters, penetrated with Nature and full of her spirit, have always known how to unite individuality and truth with beauty in their works. Such are the works which remain to us of Phidias or his cotemporaries, and of the great sculptors who followed immediately after him.

"The painter," says Leonardo da Vinci, and the same may be said of the draughtsman, "should study by rule, and should let nothing escape being treasured in his memory." And it is therefore that he recommends the student, after having made a copy of a model as exact as he is capable of making one, to practice himself in reproducing it from memory. By this exercise, in truth, not only is the memory strengthened, without which there is neither art nor science, but also the attention, which is nothing else than the intellect itself strained and applied by the will; and in fine, those types which the student has learned to comprehend by attentive comparison of their proportions, preserved and constantly present in the imagination, become permanent subjects of new reflections, comparisons, and instruction.

To drawing after models should then be united as much as possible this practice of drawing from memory, which, long neglected, has been introduced successfully as we have already had occasion to say, several years ago, in the teaching of the special school of drawing, (*école spéciale de dessin*.) But, as we have also remarked, in order that this practice should not have those inconveniences which attend on the habit of working without a model (*travailler de tête*), and that it may not keep one away from the observation and simple (*naïve*) imitation of nature, it is important, according to the express recommendation of Leonardo da Vinci that a faithful tracing should constantly serve to verify and correct the inaccuracies of the drawing from memory; it is upon this condition that such a practice may be used, without danger, to fix in the mind the results of the imitation of models.

In making the student study and reproduce the different models, the professor should teach him to attend to the expression, above all, of their essential character, that character which is from the very first visible in the whole at one view, and which is found to be the same in the smallest details; he should teach him therefore, from the first, to express the general character in the whole, he should teach him in the next place never to lose this point of view, but to pursue his researches even to the details of the very smallest parts. He should apply himself thus to make his pupils understand how in the *chefs d'œuvre* of art, just as in the works of nature, the different parts are among themselves analogous in their movements, their proportions, and their forms; how, accordingly, while they have each their own peculiar nature and spirit, they nevertheless express by their correspondence and mutual agreement, the indivisible spirit which is the soul and principle of the whole; how, in them, in short, variety is thus made subject to the law of unity, which forms out of it an order and harmony.

He will apply himself to make clear how it is that in those masterpieces in which especially reign those proportions to which, with Leonardo da Vinci, we may give the name of Divine, with still greater variety is united a more perfect unity: how these two opposite elements of harmony rising at once, so to speak, to a higher power, and the unity of the idea becoming more vivid still by the very contrast of the diversity which it subdues under its law, there results that superior harmony which constitutes beauty; how, in short, in all true beauty, even when the character of the movements and forms is rather grace than strength, or elegance rather than majesty, nevertheless, by the predominance of the whole over the parts, of the unity over the variety of the subject, order partakes of grandeur, and with the beautiful, properly so called, is mingled more or less of what is called the sublime.

By these means he will teach his pupils by little and little to recognize in true beauty the image of that Spirit which is its divine and mysterious principle, and he will render them capable by degrees, of comprehending that thought of a great master, painter, and philosopher, that the Beautiful, for all that it manifests itself in bodies, is by nature incorporeal.

But to teach men to judge accurately of the spirit of forms and of beauty,

which is the highest object of instruction in Drawing, the study which can be made of models copied and reproduced from memory is not enough. Their number is necessarily too much restricted. "It is not enough to draw" says Leonardo da Vinci, "we must still see and compare the works of different masters."

The pupils in our schools (*lycées*) not being able to go to seek here and there the various works of art dispersed in so many places, nor even to visit, except very rarely, the Galleries where they are collected in great numbers, shall they then be deprived of this necessary complement of education? This advantage would be secured to them to a certain extent if each school were made, as far as possible, a Gallery; and this might be accomplished without much expense, by placing not only in the hall of instruction, but also in the parlor, in the refectory, on the staircases, beneath the vestibules, in the several school-rooms, every where in which the arrangement of the place would allow of it, and in such a manner as to harmonize with that arrangement, reproductions, by casts, engravings, or photography, of the *chefs d'œuvre*, of every species of ancient and modern Art. Their powerful and favorable influence would thus be every where and always exerted over the minds of youth; fed by the poetry of Homer and Virgil, of Corneille and Racine, it would also feed itself, every moment of the day, and almost unconsciously, upon that of Phidias and Raffaele, of Jean Goujon and Poussin.

To this programme of studies the Commission thinks it right to propose to the Minister to add one branch of instruction which hitherto has not found a place in the teaching of Drawing as it has been conducted in our schools, (*lycées*), and which has nowhere perhaps been regularly organized: it is that of drawing specially applied to those forms which are altogether the creation of Art, and which in opposition to those of natural objects, we may call *artificial forms*. These forms are those of the different objects which Art invents for the various wants of life, or for the satisfaction of that which Michael Angelo called the insatiable fancy of man: buildings, furniture, vessels, utensils, ornaments of all sorts.

The beings which Nature creates are in their substance and their forms that which is required for the end which they have to fulfill; and at the same time they compose harmonies, either by their figures or by their colors, which satisfy one superior and universal end which is Beauty. The objects which Man creates for his use are also determined, both in their substance and their forms, by the very nature of the wants they have to serve. But, like nature, man also pursues at the same time a higher end. Among all substances, among all forms, he chooses as much as possible for his creations those which best satisfy the conditions of Beauty. This is not all: to these forms he adds others which may serve, either better to express the idea from which the first proceed, or else to raise their beauty; these accessories, by means of which objects tell what they mean, in some sort, with more clearness, force, and grace, and in a more elevated style—these accessories which form the poetic character of the principal forms, and which accompany while adorning them, as a musical harmony accompanies and emphasizes the theme of the melody—these are the *ornaments* of the creations of Man. In the first place, the *forms* which Art creates for the objects necessary to the different uses of life; in the second place, the *ornaments* of which they are susceptible; such should be the double object of this new branch of instruction, which the commission think it right to propose for institution.

Since the time which can be devoted in the schools (*lycées*) to the study of Art would not by any means suffice to complete it in all its parts, nor even in any one of them, it is evident that, instead of running over them all, so as to learn nothing, or very little, the best thing is, generally speaking, to apply ourselves to push as far as possible the study of that which is the most difficult as well as the most important, and which one can not know without being capable of learning all the rest in a little time, that is to say, the study of the human figure. For whoever is able to represent the human figure well in its proportions, its character, and its beauty, will learn without difficulty, and in but a little time, to represent as well the proportions, character and beauty of animals, landscape and flowers, &c.; while the converse of the proposition is by no means true. From hence it would seem that neither can there be found a place in the schools (*lycées*) for teaching the drawing of those forms which we have just called Artificial forms. These forms, in truth, composed of the same elements as those of natural objects,

do not surpass—for the most part do not even equal them in complications and difficulties. So a man may form a good judgment of the proportions of a candelabrum or vase, who could not judge as well of those of a great part of the beings which Nature has created. A man, on the other hand, who knows how to see animals and plants accurately, and therefore to draw them well, will be able to appreciate, and therefore to draw as it ought to be drawn, a vase, a candelabrum, or a volute. How much better still he who is able to understand and to trace out the cunning lines of the human figure!

But although in the drawing of the human figure the universal principles of the drawing of other kinds of forms is included, nevertheless, each of these kinds has again its peculiar principles. Hence it follows, that in order to draw well the forms they include, and consequently to form a good judgment of their proportions, of their character, and of the particular beauty of which they are susceptible, we must unite with the study of the drawing of the human figure, certain other special studies. If this is true of the forms of natural objects, perhaps it is still more true of those of which the imagination of man is the source. The forms of nature, in truth, being more or less analogous to our own, answer, by a secret harmony, to the intimate constitution of our souls, and hence it comes that even those who possess not the slightest trace of art, judge tolerably well of the beauty of such forms, whether in nature itself, or in the works of art which represent it. As to those, on the other hand, which are the creations of art, the cultivation of taste alone, by seeing and studying masterpieces, makes us capable of judging of them.

Again, for the very reason that these forms are those of objects which serve the ordinary purposes of life, and which our wants, or the variations of fancy, invite us perpetually to alter and renew, we have to exercise our judgment upon them continually; and this is another reason why it is desirable that studies of a special nature should put us in a condition to bring an enlightened judgment to the task.

To this consideration is to be added another, drawn from the interest of these arts themselves, with which, in our country of France above all, so many other interests are connected. If the destiny of Art, in general, depends in great part on opinion, more or less enlightened, of the public, this is especially true of those arts which are closely connected with Industry, and which can not dispense with the connection. Separated from the public by intervening circumstances, more or less numerous, scarcely known to it, even the artist who, in these arts which are reputed as secondary, displays the rarest ability, produces no impression by the authority of his name, and exercises but a weak influence on the judgment of the majority of men. If, besides, in order to judge of pictures and statues, we are well content to defer to a certain extent to those skilled in the knowledge and practice of painting and sculpture, and who, in consequence, are necessarily the best judges of such works, still the same thing is not true in the case of those familiar articles by which we are surrounded, and of which we are making some use every moment, and every one willingly thinks himself capable of forming a judgment as well as any body else.

Lastly, let us add that if of all the branches of Art, the Drawing of such objects as Industry appropriates to the various uses of life is not the most elevated, nor that consequently, which can most contribute to the education of the soul and the mind, it is that which, on the other hand, in addition to the advantage of enabling us to exercise a judgment upon those things of which we have the most frequent need, unites this advantage too, (which is a necessary consequence of the former,)—that of finding immediate employment in the greater number of industrial professions and trades.

In giving, then, the first and highest place in the study of the elements of art to the Drawing of the Human Figure, which is its highest branch, it seems that there are sufficient reasons to make room also for that branch of art which in some sort occupies the other extremity of the scale, and whose direct applications are by much the most numerous as well as, materially at least, the most useful.

Since those forms which are the creations of the imagination divide themselves naturally, as we have said, into great classes: namely, the figures themselves of buildings, furniture, utensils, &c., and the ornaments with which those different

objects may be clothed, the teaching of the Drawing of artificial forms should also be divided into two portions, corresponding with these two classes of objects. During the first portion of this teaching, the student should be made to study at first select profiles of some of the principal features of which Architectural Buildings are composed, the Vases, Brackets, Vasques, Balustrades, Candelabra, &c., adding sometimes the study of the ground plans of architectural works to that of their profiles. In directing the study of these objects, as in that of Man, the master should apply himself to make it clear how the proportions of the different parts depend on one another, and vary one with another; how in this agreement and connection, which give to every work of art its special beauty, as well as its definite character and expression, the thought shines out, the spirit which produced such forms; how from the harmonious concert of those proportions which Leonardo da Vinci called "divine," results at last the perfection of Beauty.

To this teaching should be joined the exhibition, by a sufficient number of examples, of the several modifications which the various forms must undergo, and the particular characters or expressions which they must assume, according to the difference of substances, following the different nature of marble, of stone, of granite, of wood, of ivory, of iron, of bronze, of the precious metals, &c.

In directing the special study of ornamentation, the professor should make known both the principal types which art has created, and those which it most commonly borrows, whether from the animal or vegetable kingdom: he should, above all, explain how it modifies the elements supplied by nature, and transforms them so as to please the fancy of men.

For every branch of this course of study, the models should in general be borrowed from Greek Art, which, in this department as in all the others, knew how to unite with the most perfect agreement of the forms, with the destination of the objects and their material, the greatest originality of character, the highest style, and the most surpassing beauty. Other models may, however, be added, borrowed from Roman and Oriental art, as well as from that of the Middle Ages, and of the *Renaissance*, which, though they do not reach the same degree of supreme perfection, have, nevertheless, produced a crowd of masterpieces in this department.

The exercise of reproduction from memory, which would fasten in the imagination the most finished types, should be applied to the drawing of artificial forms and their ornaments, as well as to that of the human figure, and will produce the same result.

Perhaps to these studies, should be added some practical lessons on the employment of color in ornamentation, lessons which would initiate the student to a certain extent in the knowledge of the relations and harmonies of tones in color.

To conclude, as in the case of figure drawing, besides the models of artificial forms, which may be made during the progress of the course, other *chefs d'œuvre* of art, placed in every direction throughout the schools (*lycées*) under the eyes of youth, would succeed in penetrating them with the spirit which produced them, with that universal spirit from which equally proceed that heroic *contours* of the marbles of the Parthenon, and the profile of the least of the earthen vases hidden in the sepulchres of Athens or of Vulci.

[The Commission proceeds to point out the proper distribution of all these studies, among the classes in the *lycées*, the schools of general education in France, and conclude with recommending that Masters in Drawing, shall undergo a special examination, and rank hereafter as Professors, and that the proficiency of the pupils shall be tested by frequent inspection confided to men possessed of special knowledge on the subject, who shall report periodically to the Minister the results of their observation.]

Upon this admirable report the Minister of Public Instruction has promulgated a Decree embodying its several suggestions as part of the national system.]

XIII. CATHOLIC EDUCATIONAL ESTABLISHMENTS

IN THE UNITED STATES.

I. COLLEGIATE INSTITUTES.

THERE are at the present moment in the United States, about thirty-five colleges or collegiate institutes under the direction of Roman Catholics, two-thirds of which are duly incorporated by the Legislature of the States in which they respectively are. Their influence may be estimated from the fact that they contain at least four thousand pupils, pursuing a collegiate course.

Little public attention has been given to these institutions, which are often confounded in popular ideas, with the theological seminaries, wholly distinct establishments of which we shall speak hereafter. They deserve nevertheless, especial study, inasmuch as they differ in their organization, plan of studies, mode of teaching, and regimen, almost entirely from the other colleges in the country. The oldest of these, that of Georgetown, was founded in 1791 by members of the then extinct society of Jesus, and has, since the partial, and subsequently general restoration of that celebrated order by Pope Pius VII, been conducted exclusively by them. The Jesuits also direct Saint John's College at Frederic, Washington Seminary, Loyola College, at Baltimore, St. Joseph's College in Philadelphia, St. John's College at Fordham, St. Francis Xavier's College at New York, the College of the Holy Cross at Worcester, Massachusetts, St. Xavier's College at Cincinnati, St. Joseph's College at Bardstown, Kentucky, the University of St. Louis at St. Louis, Missouri, St. Charles' College at Grand Coteau, Louisiana, and the College of the Immaculate Conception, at New Orleans, Springhill College near Mobile, and Santa Clara College in California.

Two Colleges, St. Joseph's, in Ohio, and Sinsinawa Mound College, in Wisconsin, are directed by the Dominicans.*

The University of Notre Dame du Lac, in Indiana, is under the charge of a community styled "Priests of the Holy Cross."† Villanova College, in Pennsylvania is directed by the Augustinians,‡ and the College of the Immaculate Con-

* The Dominicans, Friars Preachers or Black Friars, were founded in 1215 by St. Dominic Guzman, and spread over all Europe. At the time of the Reformation, some English Dominicans retired to Belgium, where they continued till 1805. Driven at that time from their convents by the French troops, a number of them, led by Father Edward Fenwick, an American, came to Kentucky, whence they have extended to Ohio. See *Spalding's Sketches of Kentucky*. p. 149-161. The Dominicans in Wisconsin are of more recent origin, being chiefly Italian fathers, brought over by the zeal of a member of their order, Rev. S. Mazzuchelli. For an account of this branch, see "Memorie storiche ed edificante d'un missionario apostolico dell'ordine dei Predicatori," Milan, 1844. For the Dominicans generally, see Helyot, *Histoire des Ordres Religieux*, (Edition Migne, Vol. 2. p. 87.)

† The Priests of the Holy Cross were founded in 1839, at Maus, in France, by the Rev. Basil M. A. Moreau, and were introduced into Indiana in 1842, by the Very Rev. E. Sorin, who has since been Superior.

‡ The Hermits of St. Augustine were organized as an order about 1254, and follow a rule drawn

ception, at Galveston, by the Oblates.* All the others are under the charge of secular priests, that at Mount St. Mary's in Maryland, being what would be termed in France, a *Grand and Petit Seminaire*.

There is no Catholic College in the United States, with an exclusively lay faculty, and as we have seen, most of the colleges are directed by communities of various religious orders, the Jesuits having by far the greater number; and from being an order devoted essentially to the cause of education, have given more or less a form to Catholic instruction in all countries. The Dominicans and Augustinians founded long prior to the Jesuits, are devoted especially to preaching, missions, and the ministry, as auxiliaries to the secular or parochial clergy. The Oblates are a very modern order, whose object is missions to the ignorant, the visiting of prisons, and the like. These three orders have undertaken instruction only because the wants of the present time require it. The Priests of the Holy Cross are also a recent foundation, but as they avowed by copy the rules of St. Ignatius Loyola, Colleges enter in the regular sphere of their duties.

The various colleges have had properly no foundation, but are self-supported, and as the professors have no salaries, the income enables the institution gradually to reduce the debt. Almost all have begun with a heavy mortgage debt, the small amount which can be collected barely sufficing to secure the necessary ground and prepare the buildings for class use. Of the institutions which we have mentioned few, if any, are absolutely free from debt. Many of them are incorporated, and where such is the case, the legal title is in the corporation created by law; but where the legislature of the State declines or refuses to grant a charter, the title is vested in individuals as trustees. Each college is independent of the rest; there being no common bond among them; those belonging to the same order form one or more provinces of the order, under a superior, who every year appoints the professors in the various colleges. Among the Jesuits, the President of each college is appointed for three years by the head of the order, the Provincial appointing merely the professors; but each college is recognized as a distinct institution, the superior cannot transfer the property of one house to another, and each house keeps regular accounts with any other for any occasional payments made in favor of each other.

A religious order has in the present state of Catholicity in the United States greater advantages for conducting a college, from the fact of their cheapness of living, and the facility with which they can appeal, through members of their order elsewhere, to the benevolence of Catholics in other parts. Contributions from France, Mexico, and Germany, have often aided to erect, we can scarcely say endow, Catholic colleges in the United States.

Most of the Catholic colleges give boarding and lodging to the students, and for this, with tuition, charge, about \$200 to \$250 per annum: for day scholars the usual terms are fifty dollars per annum. The mode of life in them, is very regular and strict; the pupils sleep in large dormitories, in each of which, one or more teachers sleep to prevent any disorder, and have an eye to the conduct generally.

from the writings of St. Augustine, Bishop of Hippo. A Father of this order came from Ireland to this country, about 1790, and settled at Philadelphia. In process of time others joined him, and the order assumed a regular form. Their college is of recent origin, and its opening was delayed some years by the Philadelphia riots of 1844, in which they lost a splendid library.

* The Oblates was founded at Aix in France, in 1815, by Mgr. Mazenod, now Bishop of Marseilles. Their order was approved in 1826, and devotes itself to the spiritual good of prisoners and the poor. Its American missions date from 1841.

All rise at a signal, and after dressing, descend in order to an apartment set apart for washing, &c., where they are under supervision. When entirely dressed, they generally meet in a large hall, where prayers are recited, and from which they proceed to the chapel where it is the custom for the students to hear Mass daily.*

After prayers the students proceed to the large study hall where each takes his seat at his own desk and prepares his lessons for the day. At the regular hour, they proceed to the refectory in order for breakfast, and during the meal one of the students reads aloud. A short recreation follows breakfast, and at its close, the students after getting their books from their desks in the study, proceed to their several classes, which open with a prayer and are continued for about two hours, and then after a slight recreation they return to the study and prepare the afternoon lessons: except such as pursue auxiliary branches, who now generally attend them, and under this head come German, Spanish, Drawing, as well as the classes of Natural Philosophy, Chemistry, &c. The pupils dine about twelve, and are allowed recreation till two o'clock, when they return to their classes for two or three hours more, the whole period of actual teaching being between four and five hours a day. After another short recreation, they reënter the study, and remain till supper time, when they proceed to the refectory. Here, as at breakfast and dinner, a student reads during the meal. Evening prayers are said after another recreation, and all then proceed to their dormitories. All are subjected to this regime from the highest to the lowest, and students are never allowed to gether without a prefect or tutor.

Thursday, not Saturday, is the usual recreation day of the week.

To understand the management of these institutions, especially those of the Jesuits, it is necessary to have a correct idea of the Society of Jesus. Like the Dominicans, Augustinians, and others, they are a religious order in the Catholic Church; and were founded by St. Ignatius Loyola, in 1540, as a missionary order, but soon devoted themselves in a particular degree to the cause of education. Their success was signal, their improvements in teaching were immense, and their text-books, grammars, rhetorics, editions of the classics, treatises on mathematics, navigation, gunnery, &c., became the standard works of the time. During the last century a strong party was formed against them, supported and excited by the anti-christian philosophers of France, and they were successively deprived of their institutions in France, Spain, and Portugal, and expelled from the two last countries and their various colonies. Pope Clement XIV., on this, entirely dissolved the Society, but it was restored by Pope Pius VII., and now comprises about five thousand members.

It has existed in the United States since the settlement of Maryland when some Fathers came over; but the greater part of the Jesuits in the United States were originally colonies from the order in France and Belgium.

The Society of Jesus consists entirely of men; and women are not permitted to live in their houses even as servants. Of their number, about one half are priests, the other half scholastics, and temporal coadjutors. The scholastics are young men intended in time, to be promoted to the priesthood, but engaged either in studies for that purpose, or in teaching; the temporal coadjutors correspond to the lay brothers in other religious orders, and attend to the domestic duties of the

This custom is not universal.

house, the cultivation of the ground, or ply their trades for the benefit of the community, as carpenters, tailors, smiths, carvers, painters, and the like.

The teachers, so far as the college is concerned, are the priests and scholastics, appointed to the several classes for the time being; having no salary, but simply receiving like the lay brothers, their food and raiment.

A Jesuit college comprises six classes, styled in the *Ratio Studiorum* of the Society, Lowest Grammar, Middle Grammar, Highest Grammar, Humanities and Rhetoric with the Class of Philosophy.

The lowest Grammar class, goes over the rudiments of Latin and Greek grammar, and reads extracts from Cicero, Phœdrius, and Nepos; in the Middle grammar, the whole Latin grammar, and most of the Greek is taught; the authors read, being Cæsar, Ovid, Æsop, Cebes, and Lucian. The highest grammar class is devoted to a review of the whole grammar, and to the inculcation of the idioms, exceptions, particular turns of phrase and prosody in Latin, and to the whole grammar in Greek. The authors named, as suitable to this class are Cicero's Letters, De Amicitia, De Senectute, Sallust, Quintus, Curtius, and Livy, among prose writers, Ovid, Catullus, Tibullus, Propertius, Virgil's Eclogues, fourth Georgies, fifth and seventh Æneid, among the poets, and in Greek Xenophon, and St. Chrysostom.

In these classes the teacher prepares each day's lesson with the class in advance, translating it word by word, explaining the construction, elucidating difficulties, and finally rendering it into pure English. The pupils are then required to commit the lesson to memory, learn the translation and bring as an exercise either the literal translation of each word, or the free translation of the whole, or the parsing. An exercise every day is however, required, and this entails a great deal of writing on the part of the student.

The exercise of the memory is much insisted upon, and it is practised in all the classes, the object being to store the mind with Latin words and phrases to be used in Latin composition, the great object of this plan of education. As the pupils advance, this branch is much cultivated, and no endeavor spared to give the pupils a pure style, and enable them to write correctly in prose and verse. The years especially devoted to poetry and rhetoric, are spent in the study of the best specimens of poetry and oratory in Latin, Greek, and their own tongue, and in analogous efforts of their own. Our system wants perhaps unity in this point; a pupil reads more than in the Catholic establishments, but does not read to the same purpose. We translate more and appreciate less: accordingly we find the course in Catholic institutions made up more of extracts, while in other colleges entire books are read, Cæsar's Gallic war, Virgil's Eclogues, or Books of the Æneid or Iliad. The period of college life among us, being entirely too short to read in class any considerable amount of the classic writers of antiquity with our own too neglected classics, it may well be a question whether the object of college education is not lost sight of. A complete acquaintance with the masterpieces of literature being impossible, all that college education can aim at, is to form the taste of the pupil, and enable him on leaving his Alma Mater to pursue his reading understandingly. Few graduates of our colleges ever take up the classics *con amore*. Yet, if instead of reading a whole book of Cæsar, Sallust, Livy, or Tacitus, beautiful narrations were selected, well studied, explained, and compared with narratives from historians of our own tongue, and then made the basis of composition, the whole would become practical.

To return, however, to the details of the classes :—The class of humanities is intended to lay the ground work for eloquence, by a knowledge of language, a degree of erudition and an acquaintance with the precepts of eloquence. Cicero, Cæsar, Sallust, Livy, Quintus Curtius, Virgil and Horace, are the chief authors placed in the hands of the pupils, and the teacher is instructed to devote his attention chiefly to observations in Latin and English, on the force and etymology of words as used by the best authors ; on the various forms of expression, in comparisons of the genius of the various languages, and in encouraging imitations.

The class of Rhetoric is devoted to Oratory and Poetry, and the authors are Cicero's orations, and Quintilian, Cicero, and Aristotle, as Rhetoricians ; while in Greek, Demosthenes, Plato, Thucydides, Homer, and Hesiod, with St. Basil and St. Chrysostom, are recommended.

During this year, composition in prose and verse, in English and Latin is much encouraged, the lessons serving as models. To render them so, the teacher develops the idea of the poet or orator, shows his plan, and how aptly he brings in the various circumstances to produce the effect intended, whether to move or to please ; the example of the various rules of composition are brought out and compared ; the allusions of the author are all necessary to a complete understanding of his idea fully explained, and finally, the choice of words examined.

In reading English or French authors, the same plan nearly is followed.

The class of philosophy embraces Logic, Metaphysics and Ethics, and extends over one or two years ; little time being given to any other branches, except the higher mathematics and the evidences of religion. In philosophy the text-book is Latin, and Latin is the language of the class. The portion of the author for the day is recited by the pupils and then commented on by the professor, who when a thesis occurs, makes the objections given by the author and others also, for them to solve. On certain days theses are maintained by the students against such as may be appointed to object.

During the three Grammar classes, Humanities and Rhetoric, the ordinary branches of an English course, History, Geography, Antiquities, Mathematics, and Modern languages, keep pace with the learned languages, and are taught as in the schools of the country generally. Diplomas are conferred only on those who pass through the year of philosophy creditably enough to stand a fair examination *

This rapid sketch will give some idea of the more remarkable points of peculiarity observable in these institutions ;† and almost all with slight variations are to be found in the other Catholic institutions in the country, those under the secular clergy approximating more, however, to the general institutions of the country, the teachers being employed. Mount St. Mary's contains a theological seminary

* Most of the Colleges we have mentioned are incorporated ; but New York refuses to incorporate the College of St. Francis Xavier, and Massachusetts that of the Holy Cross. The graduates of these institutions obtain their degrees from other institutions on examination and proof of proficiency.

† We have not mentioned the use of the Missal and Breviary, as Class Books, for though it has been asserted in an educational work issued by the authority of the State of Michigan, that Catholic Institutions use them, we may say that no Catholic teacher ever dreamed of introducing them, first, because they are very expensive, and unhandy, a Missal being generally a stout quarto or folio, and a Breviary, a four volume work, or a portly royal octavo ; secondly, because the price which is, from ten dollars upwards, would make it very expensive, and thirdly, because they are of very inferior Latinity. The work to which we refer is published by Harper & Brothers, New York, and it is a striking proof how little Catholic Institutions are known, when such an assertion, totally devoid of foundation, can be made, not incidentally, but as the basis of an argument.

under the charge of secular priests, and the seminaries are teachers in the college, as is the case in France, where these colleges, termed *petit seminaires* were intended originally for such only as were to enter the *grand seminaire* and pursue divinity studies, but were subsequently thrown open to all.

Mathematics are cultivated in about the same manner as in our American Institutions; less time being given however to Arithmetic and Algebra, and more to the theoretical part. Arithmetic, Algebra, Geometry, Analytical Geometry, and Calculus, have each a year; and with these latter are pursued courses of Natural Philosophy, Chemistry, Mechanics and Astronomy. In all these branches the ordinary American text-books are used, and our usual system of instruction more or less closely followed.

History forms a regular part of the instruction from first to last, and where matters are regularly organized, includes a complete course, beginning with Sacred History in the lowest class, followed by a short Ancient History, History of the United States, and then fuller Ancient and Modern History. In some, however, small general compendiums of History, and Histories of the United States, are used in the lower classes, and General Histories in the more advanced classes. The authors adopted, so far as Modern History is concerned, are almost exclusively the works of Catholic authors, few others being free from what Catholics consider erroneous views, which they can not teach.

The religious instruction in these institutions is less than is usually supposed. Once a week, usually on Saturday, a lesson in the small Catechism is recited and explained at length by the teacher, or some other point developed by him. On Sundays, and holidays of obligation a sermon is preached at the High Mass which all attend, but the amount of direct religious training is comparatively slight. Piety is cultivated, more especially by Sodalties or devout Associations formed among the pupils, the members of which, meet at certain times in the week for prayer in common, instructions and exhortations. These sodalties generally have libraries of their own, exclusively of pious books; by the circulation of which feelings of devotion are nourished and maintained.

In the course of each year a retreat is generally preached to the students: that is, several days are devoted exclusively to devotion and instruction in the great truths of religion, especially such as are calculated to excite sorrow for the past, firm resolution of leading a better life, and a desire of advancing in christian virtue.

The religious duties of Catholics are of course strictly observed, and as a general thing, the pupils go to confession every month.

These are we believe the points on which a stranger would naturally seek information as regards these institutions: and we shall close by some remarks on another class, the Catholic Theological Seminaries or Schools of Divinity.

II. THEOLOGICAL SEMINARIES.

The various religious orders have regular courses of divinity for their scholastics, or students preparing for the priesthood, which is conferred by the Bishops, when satisfied as to their proficiency; for the formation of a secular or parochial clergy, each Bishop according to the decrees of the Council of Trent, should have a diocesan seminary. The Catholic Bishops in the United States have endeavored to carry out this, and Bishop Carroll, soon after his appointment founded St. Mary's Seminary at Baltimore, the oldest Catholic Theological Seminary in the country. It has been from the first, directed by members of the Association of St. Sulpice,

who are connected with the house at Paris. There are also at present in the United States the following Theological Seminaries: Mount St. Mary's, Emmitsburg, 24 students; St. Charles, Philadelphia, 19; St. Joseph's, Fordham, N. Y., 40; Seminary, Buffalo, 8; Seminary, Wheeling, 7; Seminary, Cincinnati, 14; St. Thomas', Bardstown, 5; St. Mary's, Cleveland, 14; St. Charles, Vincennes, 15; St. Vincent's, Lafourche, La., 12; St. Louis, Carondelet, Mo., 28; St. Mary's, Barrens, Mo., 32; Seminary, St. Paul, 4; Seminary, Mobile, 5; St. Francis de Sales, Milwaukee, 12; St. Thomas, San Francisco, 12; Seminary of Guadalupe, California, 12.

These Seminaries are in many cases very small, several having less than ten students, and none over fifty. For entrance into them, a knowledge of Latin is required and a generally good education, but as will be evident no regular standard can be fixed in so many incipient institutions.

The course of education in all these theological seminaries is uniform. The studies are in Latin, and comprise a course of at least three, sometimes four or five years. The first year is given to philosophy, and this is taught as in the colleges, but with a direct reference to the future study of theology, so that even graduates of Catholic colleges entering, often repeat their philosophy. Under the head of philosophy is comprised Logic, Metaphysics and Ethics: the text-books are, Bouvier, Liberatore, Rothenflue, the Philosophy of St. Sulpice, Fournier, Dmowski, or a course dictated by the Professor.

After the class of philosophy, theology is begun; and there are generally two professors, one of dogmatic theology, the other of moral, who both teach in Latin in the same way as the professor of philosophy. The authors on Dogmatic theology most used are Kenrick, Perrone, Bouvier; on Moral Theology, St. Liguori, as arranged by Neyraguet, Kenrick or Gury. Besides these, there are professors and classes for collateral studies, Ecclesiastical History, Holy Scripture, Sacred Oratory and during the last year of the course, Liturgy, which is rather a preparation for the duties of the priesthood, than a course of study.

In many countries, boys who evince a vocation for the priesthood, have the Little Seminaries in which they pursue studies, having a direct bearing on those to be pursued in the Theological Seminary, but of such institutions, only three exist in the United States; one at Ellicott's Mills, under the Sulpitians, and containing fifty-four pupils, another at Barrens, Missouri, under the Priests of the Mission, containing a hundred students, and a third at Bardstown, with fifty-two. These institutions are perfectly distinct from the colleges, and yet as many of the students on concluding their course, feel no disposition to enter the Theological Seminary, they contribute to the general cause of education.

Besides the students in the Theological Seminaries in the country, many American candidates for the priesthood pursue their divinity studies abroad, in Canada, Ireland, France, and especially at Rome, where it is now in contemplation to erect an American College, which notwithstanding its name, is to be merely a Theological Seminary for students from the United States.

Besides these Collegiate Institutes, there are some others of less pretension, academies confined to an English course, but these are chiefly day-schools, and their methods of instruction and course of study differ in various parts. The Brothers of the Christian Schools,* conduct several such schools, the largest being

* The Brothers of the Christian Schools, were founded in 1679, by the venerable John Baptist de la Salle. Their chief object is the direction of parish and free schools. They were introduced into the United States in 1840, and have already the direction of a very large number of schools.

the Academy of the Holy Infancy at Manhattanville, which contains seventy pupils, all boarders.

III. FEMALE ACADEMIES—CONVENT SCHOOLS.

While the various religious orders which we have mentioned, and the secular clergy thus supply the educational wants of boys and young men of more advanced age and acquirements, the education of the other sex has not been neglected by the Catholics in the United States. According to the Catholic Almanac for 1856, there are one hundred and thirty female academies, while the literary institutions for young men are set down at forty-seven.

All these female academies are directed by members of religious orders of women. Of these orders the oldest in the country is the Ursulines, whose convent in New Orleans, dates back to the year 1727. These religious have always enjoyed a high reputation as teachers, and convents of their order exist also at Galveston and San Antonio, in Texas, at St. Louis, in Missouri, Cleveland, Fayette, and Toledo, in Ohio, and at Morrisania, New York.*

The method of teaching in these schools is not peculiar, except in so much as continental ideas are introduced by ladies from Germany and France. Latin being seldom, if ever, made a part of the course of instruction, a thorough English education, with such accomplishments and acquirements as befit their sex, is the object which they propose to attain. The regimen of the establishments being based on that of the convent, does not vary greatly in its outline from that of the colleges and institutions for the other sex, the modifications being such as would naturally be expected.

The course of study also varies according to the requirements of the locality.

After the Ursulines, the oldest teaching order in this country is the Visitation Nuns, established in the United States by Miss Alice Lalor, a native of Ireland, toward the close of the last century. Their first convent was that at Georgetown, and that Academy has constantly maintained a high name for the solid and polished education which it affords. There are besides, academies of the Visitation order at Brooklyn, Mobile, St. Louis, Frederick, Baltimore, Catonsville, Wheeling and Keokuk.†

The most popular convent schools, especially with the higher classes are, however, those conducted by the ladies of the Sacred Heart, a recent order formed especially for teaching and aiming to give the highest grade of instruction to young ladies. They opened their first house in the country at Florissant in Missouri, in 1817, and they now conduct academies at St. Louis, Detroit, Manhattanville, New York, Rochester, Eden Hall near Philadelphia, Baton Rouge, Grand Coteau, and St. Michael's, in Louisiana.‡

* The Ursulines were founded in 1537, at Brescia, in Italy, by Saint Angela Merici, as a pious association. In the seventeenth century, it became a religious order of cloistered nuns in France, and as such spread to other countries. The foundress of the house at New Orleans, was Mary Tranchepain, de St. Augusten. There is a convent of the same order at Quebec, founded in 1630, by the celebrated Mother Mary of the Incarnation.

† The order of the Visitation was founded in 1610 by Saint Jane Frances de Chantal (grandmother of Mme. de Sevigné) under the direction of the amiable Bishop of Geneva, St. Francis de Sales. In the United States the foundress Miss Lalor, in religion, Mother Teresa, beheld her work consolidated in 1813. For an account of the order, see *Butler's Lives of the Saints* (August 21,) or *Helyot Historie des Ordres Religieux*. IV. 2:5

‡ The Ladies of the Sacred Heart were founded in France by Magdelen Josephine Baral, the present Superior in the early part of the present century. It was approved by Pope Leo XII, in 1826, and spread rapidly in France, Italy, Belgium, Germany and America. the principal.

The Sisters of Charity* instituted in this country by Mrs. Elizabeth Seton, daughter of the celebrated Dr. Bayley, include teaching among their good works, and have since their origin had a celebrated academy at Emmettsburg, and similar establishments with day-schools in a great number of cities, including the academy of Mount Saint Vincent near New York, a large and flourishing school.

Besides these, there are other orders such as the Sisters of the Holy Cross, and Sisters of Providence in Indiana, the Sisters of Loretto in Kentucky, and other Western States, Dominican nuns in Ohio and Kentucky, Sisters of the Immaculate Heart, Sisters of Mercy, Sisters of Notre Dame, Sisters of St. Joseph, Sisters of St. Bridget, &c., some directing a number of academics, others almost solitary institutions. These orders all differ from each other as to their rules and dress, but nearly resemble each other in their plan and mode of instruction.

IV. CATHOLIC FREE SCHOOLS.

Besides the institutions for youth of both sexes to which we have alluded, the Catholic body maintains a large number of free schools attached to their churches, and nearly equaling in number the churches themselves. No fact is better known or has been more widely made known than the dissatisfaction of Catholics generally with the free schools maintained by the several States, a dissatisfaction arising from an anti-Catholic and proselytizing spirit frequently evinced by persons more or less connected with them, even where the law endeavored to preserve the Constitutional neutrality on the difficult point of religion. The Catholics at one time endeavored to obtain such modifications in the system as would effectually check all spirit of proselytizing, but as the consequence was an embittered reaction of that very spirit, they very generally set to work to create as far as their means permit free schools of their own. An exact estimate of the number and state of these cannot easily be given; many are conducted by lay teachers under the direction of the pastor of the church, but a large number are directed by members of religious orders. The Brothers of the Christian Schools have charge of parish schools for boys in the dioceses of New York, Albany, Brooklyn, Baltimore, Detroit, St. Louis and New Orleans; Franciscan Brothers conduct similar schools in the diocese of Pittsburg; Brothers of St. Joseph in Indiana, Xaverian Brothers in Kentucky, Brothers of Christian Instruction, in Alabama and Mississippi, and by other communities in other parts. Free schools for girls are conducted by the Ursuline, Ladies of the Sacred Heart, and especially by the Sisters of Charity, Sisters of Mercy, Sisters of Notre Dame, School Sisters of Notre Dame, Sisters of the Holy Cross, Sisters of Providence, Sisters of Loretto, Sisters of St. Bridget and others.

These schools for both sexes must number in the whole United States over one thousand, the number of pupils varying, however, greatly. The Brothers of the Christian schools in New York city alone have over 2,000 pupils under their care, though conducting comparatively few of the parish schools in that immense city.

J. G. S.

* The Sisters of Charity founded in France by St. Vincent de Paul have been the model on which most of the other orders of Sisters have been formed. Their vows are not perpetual, and they are not cloistered like the Visitation and Dominican nuns, and Ladies of the Sacred Heart.

XIV. PUBLIC INSTRUCTION IN DUCHY OF NASSAU.

THE DUCHY OF NASSAU embraces an area of 1751 square miles, and a population, in 1853, of 429,341. The state of education is highly creditable to the government, and the people.

I. ELEMENTARY SCHOOLS

The present organization of Elementary schools was introduced in 1817.

The school age embraces the period from six to fourteen years. Every child between these ages, must be under instruction at home, or in some school, public or private. Parents who do not instruct their children at home, or send them to school, are subject to a fine, which is increased on each repetition of the offence.

The time of daily attendance is from 7 to 10 A. M., and 1 to 4 P. M., in summer, and from 8 to 11 A. M., and 1 to 4 P. M., in the winter, except on Wednesdays and Saturdays, which are kept as half holidays.

The course of instruction embraces religion, reading, singing, writing, arithmetic, geography, and the elements of natural history, music, geometry, and in a few schools, of agriculture and manufactures. Girls are taught appropriate needle work on Wednesday and Saturday afternoons.

The school-house is built by the parish, and furnished with black-board, large tables of figures, and other means of visible illustration, and is generally provided, not only with a play-ground, but with rooms and a garden, and orchard for the teacher.

Teachers must be trained for three years in one of the two Normal Seminaries established by the government for this purpose,—one for Protestants at Usingen, and the other for Roman Catholics at Montabauer;—each calculated to accommodate about sixty pupils. At the expiration of three years, they have to pass an examination, after which they are appointed school assistants, with a salary of about \$60 which is increased at the end of each successive two years, until they are appointed head master, with a salary of about \$300, with the perquisite of a home, garden, and not unfrequently of organist of the parish church, and of leader of singing societies. When a teacher becomes unfit for service by sickness, or old age, he is entitled to a pension of at least one half of his former average salary; and at his death, his widow and children are provided for out of a special fund. Small as the salary is, the teacher in Germany prefers the certainty of even a small salary, paid at regular intervals, with the provision for old age, and his

family after his death, to a much larger salary, in a private school. His social and political position is higher; he ranks with the officials of the state. Females are seldom or never employed for teachers, even as assistants, except in the instruction of girls in domestic economy.

The differences in religious opinion and worship is provided for, both in the instruction and supervision of the schools. The population is divided up among Lutheran and Calvinistic Protestants, Roman Catholic, and a few Jews. In purely Protestant parishes, Protestant teachers are employed, and in Catholic districts, Catholic teachers. Where the population is mixed, and the school has two or more teachers, the teachers are selected from the several denominations. If there is but one teacher, the teacher is of the religion of the majority. "Experience has shown," says a well informed school inspector, "that when there is a conscientious endeavor to act with impartiality and justice, that there is no insurmountable difficulty in reconciling the religious prejudices of any class to the public school."

The supervision of the schools is left (1.) to a local committee, consisting of two Protestants and one Catholic, when the former predominate, and two Catholics and one Protestant, when there is a Catholic majority of inhabitants; and (2.) to school inspectors, [some seventy in all] appointed by the government, each having charge of all the schools in a certain number of parishes.

The local committee see to the repairs of the school-house, conduct the master, and his methods of teaching, and ascertain by the monthly list prepared by the teacher, the school attendance of the children, who are esteemed as being of the proper school age, and report to the proper authority those parents who are negligent in this particular, for the payment of the fines.

The district inspectors, who are generally clergymen, selected from different denominations, for their interest in education, conduct the examination of the teachers for promotion, hold a public examination of the school in the spring, and a conference of the teachers once a year, and require a written account, or return of each school annually from the teacher.

The support of the schools is thrown (1.) upon parents, who pay into the treasury of the parish from 50 cents to \$2 a year for each child; (2.) on the parishes which are required to appropriate something every year to the school-house, appurtenances, and the wages of the teacher; and (3.) on the government which pays the expense of inspection, and aids the poor families by special grants.

II. SECONDARY EDUCATION.

Secondary instruction is provided in a series of schools called the *Pedagogium*, and the *Gymnasium*.

The *Pedagogium* affords instruction of a higher grade, comprising lessons in Latin, Greek, French and German, mathematics, with the application thereof to ordinary life, natural history, natural philosophy,

technology, geography, history, religion, writing, drawing, singing, and gymnastics. The regular period of attendance on the *Pedagogium* is four years, or from ten till fourteen years of age. The classes are four, and the rise from one class to another takes place alone after a general public examination, which is held before one or more commissioners of the government, and lasts two or three days.

Besides assistant masters of different sorts, each class has its head master, and the whole establishment is governed by a rector, who is entrusted with a considerable degree of power over both masters and scholars, and who is the organ through which the will of the government concerning the school in which he presides, is communicated to all persons interested. Through his intervention, also, the wishes and opinions of those under him are laid before the higher authorities. The masters are required to hold conferences among themselves concerning the state of the school, &c., at least once a month; and on these occasions the rector presides, but the plurality of voices decides any question at issue in the conference. In the person of the rector, the duties of teacher are combined with those of administrator; but nevertheless so much of his time is not devoted to the former functions as is absolutely required from the other masters.

The *Gymnasium* receives scholars from the highest class of the *Pedagogium* and carries them farther in ancient and modern languages; a course of Hebrew is added for the theological students. Ancient geography, Greek, Roman, German antiquities, and universal grammar, also receive attention. The outlines of Astronomy, together with various branches of philosophical study: (which in Germany is subjected to infinite subdivision,) are here taught; and all the objects of instruction begun in the *Pedagogium*, are pursued as far as the knowledge and abilities of the masters and scholars will permit. Drawing, dancing, music, riding, gymnastics, swimming, &c., are here, however, objects of private study left to the option of the students.

Besides these general establishments, there exists a number of institutions for particular kinds of education, the most important of which is the Normal school or school for future masters of elementary schools before described.

III. SUPERIOR EDUCATION.

By an agreement with the government of Hanover, the University of Gottengen is open, with special privileges, to the students of Nassau, except in Roman Catholic Theology, for which candidates resort to Marburg, in Hesse Cassel.

IV. INDUSTRIAL, OR TECHNICAL TRAINING.

The government has not undertaken to provide directly for industrial education, but makes money grants in aid of the operations of a Society, [called *Gewerbe-Verein*.] devoted to the promotion of the manufacturing and commercial interests of the Duchy. The following

notice of its action in this particular is taken from Twining's "*Letters on the Condition of the working classes of Nassau.*"

One of the most important steps of this Society, has been the establishing in various parts of the Duchy, of what are called *Gewerbe-schulen*, or industrial schools, consisting of—

Firstly, Evening classes, (*Apend-schulen*.) held in winter time for the purpose of giving young Artizans and others an useful complement to their elementary education, in such branches as commercial reckoning and correspondence, and practical geometry.

Secondly, Sunday Classes, (*Sontag-schulen*.) intended for departments of study which are not so well taught in the evening as by daylight, and held on Sundays for the benefit of young men, chiefly apprentices, whose occupations would not allow them to attend conveniently during the week. They comprise the various branches of drawing required for the industrial trades, and geometry applied to the arts of design.

According to the annual Report, read at the General Meeting of the *Gewerbe-Verein*, on the 11th of May, 1853, by the able Secretary, Dr. Casselmann, the number of Industrial Schools in activity in various parts of the Duchy, is at present twenty-five, with an aggregate number of about two thousand students.

A Modeling School has also been established at Weisbaden, and is attended at present by between thirty-five and forty students.

The Report gives 7419 florins, or about 618*l.* sterling, as the amount expended in the last financial year, for founding and maintaining the above schools, of which about two thousand florins were furnished by the Society, and four thousand florins were covered by a government grant; the remainder was supplied by the localities.

To secure a proper degree of intelligence and practical skill in all who pursue any trade, there is a legalized system of apprenticeship, which Mr. Twining thus describes.

The would-be Artizan must be able to exhibit proof of having concluded his attendance at school, (which as I have mentioned elsewhere, is obligatory from the sixth to the fourteenth year,) by satisfactorily passing his final examination; he must also have passed his confirmation, which takes place about the same time; it is preceded for a considerable period, by strict religious instruction, and solemnized by both Protestants and Catholics in a very impressive manner.

If a lad is quite a dunce, and especially if he can not satisfactorily get through Catechism, he may be retained under tuition another year; or if his vicious propensities are found incorrigible by ordinary means, he may be sent off to a disciplinary school, called *Rettungs-haus*. One of these establishments was founded in 1851, near the little town of Nassau, by the Countess von Gleich, and now contains about ten boys; another has just been erected near Weisbaden by a pious Evangelical Society.

If all is tolerably right, the lad receives in due form his educational certificate, and he and his friends set about looking out for the right sort of shop, and a comfortable master; but before a definite agreement is come to, German prudence steps in very appropriately, and prescribes two weeks' preliminary trial. If this turns out to mutual satisfaction, a contract is drawn up, of which the legalization is obtained with very little expense, or none at all, if the parties are poor.

For ordinary trades, such as those of the shoemaker, tailor, joiner, baker, &c., the usual term is three years, and the total sum to be paid to the master varies from thirty to sixty florins, (\$12 to \$20;) or a term of four years is agreed upon, without payment, the work of the apprentice in the last year being expected to form an equivalent.

With respect to more difficult trades, such as those of the watchmaker, mechanic, lithographer, &c., the term is usually three or four years, with a payment of eighty to two hundred florins, (\$33 to \$40.) Some few trades, requiring little or no technical training, are exceptional with regard to payments; thus apprentices engaged in the operations of building, whitewashing, &c., not only have nothing to pay, but receive at once a daily remuneration of a few *kreuzers*.

In no case does an apprenticeship last longer than four years; serious disagree-

ments between masters and apprentices are in some measure obviated by the examination which must be undergone before an artisan can settle anywhere as master; but in all cases redress is facilitated by the practice of paying the stipulated sum by installments, so that one-third or one-half the amount stands over to the conclusion of the term. If an apprentice has just cause for complaint, he is released by the local authorities from further obligations towards his master, and his friends from further payment.

At the expiration of his term, the apprentice must furnish proof of the extent of his acquirements, by executing some appropriate piece of handiwork, in the presence of the official judges of the trade, forming a kind of jury, which, from its usefulness, deserves some attention.

Every three years the masters in each trade residing in a district, or in a group of districts if the trade is a scarce one, assemble to elect, or re-elect, three representatives for the purpose of examining the certificates, and of testing and recording the abilities of industrial candidates.

If the examiners are not satisfied with the young man's performance, he must find means of improving himself, within half-a-year, against another trial; if, on the contrary, they are well pleased, he obtains his certificate as *Gesell*, or journeyman, and sets out for his travels.

When the *Gesell* arrives at a town, he goes forthwith to the *Herberge*, or specially appointed inn of his trade, where the *Herberge Vater*, (inn father), from whom he is entitled to receive paternal attentions and advice, shows him a register, in the form of a slate, or blackboard, on which is inscribed the name of any master wanting a hand. If the register is a blank, and the *Gesell* has no cash in purse from previous savings, he may claim his *Viatikum*, or traveling money, which is either paid from the treasury of the town, or from a subscription purse of the trade, or made up by small donations which he gets at the several workshops of his calling, where he applies in succession for that purpose; in so doing, he generally makes good his claim to brotherly assistance by some token which he bears, or by mysteriously symbolical signs and passwords, analogous to those used in freemasonry.

At Frankfort, where trade affairs are reckoned to be on a more liberal, or more antiquated footing than elsewhere, an itinerant servant of the proud company of hair-cutters receives from a special purse as much as thirty-six kreuzers, (one shilling;) but this may be accounted exceptional, and in the generality of cases, the total amount which a common journeyman obtains by legitimate means, is no more than a few pence. At all events, the sum is definitive; except in case of illness, no further sum can be claimed, and it will be well if the next morning's dawn sees our wanderer trudging contentedly onward, his knapsack on his back, with a boot sticking out at each end of it, and his faithful pipe dangling at the side of his mouth, whilst he sings some classical ditty of the brotherhood.

There was a time when the industrial vocabulary construed the word *sechten* as a justifiable kind of begging, which did not disgrace a needy journeyman, but now it is inscribed in the black-book of the police; and if a poor fellow, compelled by sheer necessity, extends an unwilling hand toward a stranger, and a *gend'arme* espies him in the act, he is not only punished with arrest, but this fact is noted down in his pass-book, and subjects him, wherever he goes, to be watched with a suspicious eye, and to increased severity in case of a repetition of the offence.

Before the journeyman can become a *master* in his art, or profession, and fix his abode as such in a place of his choice, a few important steps remain to be taken. If a native of another state, he must obtain the freedom of the one of which he wishes to become a denizen; if merely of another parish, he must still get admission to parochial rights, which are sometimes expensive: in every case, he is required to accomplish single-handed, for strict inspection by the *Prüfungs Commission*, some model piece of workmanship, sufficient to show, not merely a moderate amount of skill, as when he was a candidate for a journeymanship, but his thorough knowledge of the *arcana majora* of his calling. If he can follow up the display orally, with theoretical evidence, he is entitled to be admitted forthwith to the Honorable Company of the Masters of the Trade.

IV. FROEBEL'S SYSTEM OF INFANT-GARDENS.

ONE of the most interesting and instructive contributions to the London Educational Exhibition in 1854, was made by Mr. Hoffman, of Hamburg, in specimens of the cheap and simple apparatus devised by Frederick Fröbel, to be used in his system of Infant Garden training and instruction—which has been introduced into the principal cities of Europe. We have been waiting for the reception of the specimens which we ordered, and of copies of a Practical Guide for their use, together with some French and German publications descriptive of the methods and results of this new system of infant school, or rather, of infant-play instruction—in order to give an exposition of the subject. As our specimens and documents have not come to hand, we introduce a brief notice of Fröbel's system of Infant-Gardens from the *National Society's Monthly Paper* for November, 1855.

In the list of those who in recent times have contributed by their energies and self-devotion to raise elementary education to its present high standard of excellence, few names deserve to be mentioned with more respect and honor than that of Frederick Fröbel, the originator of the German system of Infant-Gardens. Impressed with the idea that the early training of the *mind* should be based upon principles analogous to those which best develop *bodily* health and strength, he set himself to work out a system in which the natural requirements of childhood should alone furnish the groundwork for its operations. And in carrying out those ideas, which it had taken years of anxious thought to mature, he manifested a determination of purpose, and practised a course of self-denial, equal to which the history of education can furnish but few parallel instances. In the first place, he resigned a lucrative appointment at Berlin, and with very slender resources established his first infant-school in a cottage at Keilhau, in Thuringia. During the early stages of this arduous task, he lived on potatoes, bread, and water; and, in order the more effectually to economise this humble fare, is said to have chalked out each day's allowance upon his rye-loaves.

The teaching of Fröbel commences with the earliest age at which the infant manifests the power of receiving impressions from external objects. Certain apparatus, or rather toys, are used; the expense of which is extremely moderate. The first used is a box containing six colored balls, called the "*first gift*." With these balls the child is trained to exercise his limbs and use his senses. He stretches out his hand to catch them, or presses his fingers to retain them. They excite his curiosity; he learns to distinguish their form, color, and substance; and his eyes are fully employed in watching their movements. By attaching a string to the ball, numerous exercises may be performed, all tending to call into play

some faculty of the child. Specimens of these exercises are given in a work lately published, entitled *A Practical Guide to the English Kinder Garten*, (*children's garden*;) and a school conducted on Fröbel's system may be seen in operation, on any Tuesday morning, from eleven to one, at 32 Tavistock Place, (London.) This first English Infant-Garden was founded by the authors of the *Practical Guide*, M. and Madame Ronge, to whom we venture to refer those who are sufficiently interested in the subject to undertake a visit to their establishment on the day above mentioned.

From the colored balls we proceed to the "*second gift*," which is a small box containing a ball, a stick, a string, a cube, and a cylinder; the two latter perforated so as to allow the stick and string to be fixed into them. With these a variety of motions can be produced, which, however, it would be difficult to describe verbally. Here, again, the *Practical Guide* will assist the teacher; numerous pictorial illustrations being given in it of the manner in which the "*second gift*" may be used.

The "*third gift*" is a set of eight equal cubes, made to fit into a box. These eight cubes may, of course, be placed so as to form one single cube eight times as large as any one of them.

"The child is first taught to invert the box, after drawing out a small part of the lid; secondly, to draw out the lid entirely and lift up the box: he then finds the cube complete, and is allowed to pursue the dictates of his mind; he may divide it into two, four, or eight equal parts, place them upon each other, lay them side by side, count them, or arrange them in a thousand different ways, to suit his inclination. After a time he will examine them more carefully; he will see that each has the same form, number of faces, edges, corners, as the whole; he will learn to distinguish their number, size, form, position, order, and arrangement; he will learn the true meaning of up, down, here, there, this, that, these, those, above, below, under, over, upon, underneath, within, without, large, small, &c."

"In the "*fourth gift*," one large cube is divided into eight equal parts by being cut in one direction, so that the parts are parallelepipeds instead of cubes. This gift, though apparently similar to the previous one, will be found on closer observation to afford the child a greater variety of combinations than the cubes. It is remarked by Madame Ronge, that "the parts in this gift contain a greater amount of surface than the cubes, and are capable of enclosing a still greater amount of space, a far greater variety of objects may be represented—objects more lofty and spacious. An endless variety of crosses, monuments, tablets, columns, and towers may be made; illustrations of which are given in the plates. With these erections many important historical events may be associated, which a well trained teacher will ever have at command."

The "*fifth and sixth gifts*" are extensions of the third and fourth. In the third, the cube is made up of eight smaller ones, while in the fifth it is composed of twenty-seven small cubes, three of which are further divided into halves, and three into quarters. Its peculiarity consists in the increased number of parts, by which more extended operations can be carried on; and the introduction of triangular forms, by which a greater variety of buildings, articles of furniture, &c., can be constructed, and more advanced exercises in number and form given. The "*sixth gift*" stands in the same relation to the "*fourth*" as the "*fifth*" does to the "*third*," and by its aid all the exercises given under the "*fourth*" this may be carried out to a far greater extent.

One use of the cubes ought to be specially alluded to, viz.: their employment in teaching the elements of Arithmetic. Illustrations are given in the *Practical*

Guide to the English Kinder Garten, including exercises in the Simple Rules, Fractions, Proportion, Square Root, &c. The practical utility of these exercises with the cubes, in conveying to children correct notions of the first principles of number, cannot be too highly appreciated.

The succeeding "gifts," which, however, are not numerically described like those which have been already mentioned, consist of bundles of small sticks, soaked peas, flat sticks for plaiting; paper for folding, cutting, and plaiting; and slates, engraved in the form of a net of equal squares, for drawing. With the sticks, which represent ready-made straight lines, the child is encouraged to produce forms with which he is acquainted, such as crosses, stars, patterns for gardens, seats, gables of houses, and at length whole elevations of houses, churches, &c.; and when he has acquired dexterity in laying the sticks in different directions, for the purpose of representing these varied objects, the soft peas are given to him, that he may be able to unite the sticks more permanently together. The sticks might be joined together by clay; but the softened pea is undoubtedly a cleaner and neater material.

Time and space forbid any thing more than a mere allusion to the musical, gymnastic exercises, the intimations of natural and artificial movements, and other amusements, which form an important part of the *Kinder Garten* time-table. The brief outline which has been given can convey but a very imperfect idea of the methods which are employed by Fröbel and his followers for combining amusement with instruction.

"*The Practical Guide to the English Kinder Garten*," price 7s. 6d., can be procured through Trubner & Co., 12, Paternoster Row. The *Kinder Garten* Toys can be obtained at the following prices:—

	£ s. d.
First Gift,.....	2 6 each.
Second Gift,.....	1 6 "
Third Gift,.....	0 6 "
Fourth Gift,.....	0 6 "
Fifth Gift,.....	1 9 "
Sixth Gift,.....	1 9 "
Plaiting Sticks,.....	0 3 per dozen.
Paper Plaiting Box,.....	1 6 each.

XVI. EDUCATIONAL INTELLIGENCE AND MISCELLANY.

SINCE the issue of the July Number of the Journal, more than one hundred Colleges in different parts of the country, and as many more Academical Institutions for boys and girls, as well as a large number of State Teachers, and other Educational Associations, have held their anniversary festivals. We intended to have given a summary of the "Commencement Exercises" in the leading Colleges of the country, but the illness of the editor for the last three weeks has prevented any attention being paid to the material collected for this department of the Journal.

American Association for the Advancement of Education, held its Sixth Annual Meeting at Detroit, commencing on the 12th and adjourning on the 15th of August. The introductory discourse was given by Hon. Henry Barnard, on the "*Magnitude of the Educational Interests of the United States*," which was followed by another address in the afternoon, on the "*Extension of the System and Agencies of Public Instruction in the several States*," and at a later period of the session, at the special request of the Association, on "*Reformatory Education*;" by Pres. Tappan, on "*John Milton, and his Educational Views*;" by Pres. White, of Wabash College, "*On the Influence of Popular Education on Religion*;" by D. Bethune Duffield, of Detroit, "*On the Duty of the State in the Education of Children and Youth*;" by Prof. I. B. Turner, of Illinois College, "*On the Incoming Age: its Educational Needs and Means*;" by Prof. R. L. Cooke, of New Jersey, "*On the Character and Extent of the Education for which the State should make provision*;" by Prof. J. R. Boise, of the University of Michigan, on "*Athenian and American Sophists*;" by Prof. Haven, of do., "*On the Claims of Common Schools*;" by Prof. Welch, of State Normal School, "*On a higher order of Instruction than we now have*."

THE AMERICAN INSTITUTE OF INSTRUCTION, held its Twenty-Seventh Annual Meeting at Springfield, Mass., commencing on the 19th and adjourning on the 23d of August. The meeting was opened by Remarks by the President, John Kingsbury, L.L. D., of Providence, "*On the Progress of Education since the formation of the Institute*;" Addresses were made by Pres. Walker, of Harvard College, "*On the Development of the School System of Massachusetts*;" by Prof. Lincoln, of Brown University, "*On the Claims of Ancient Classics*;" by Prof. Sherwin, of the Boston English High School, "*On the Claims of Science in an American System of Education*;" by John Kneeland, of the Washington High School, Roxbury, "*On Objects to be aimed at in Teaching*;" by Prof. W. Russell, "*On an extension of the Operations of the American Institute of Instruction*;" by Prof. Haven, of Amherst, "*On the Study of Mental Philosophy*;" by Hon. George S. Boutwell, "*On the Nature and Value of Learning, and its Influence on Labor*;" by Hon. Henry Barnard, "*On the Home and Parental Element in Public Education*;" and by Bishop Clarke, of R. I., "*On the Education required by the Times*." The topics presented and suggested by the lecturers, were freely discussed by a large number of members.

THE FIRST ANNUAL MEETING OF THE TEACHERS OF NORMAL SCHOOLS, was held after the adjournment of the American Institute at Springfield.

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NOTE. This number was due according to the Prospectus for Volume II on the 15th of November, but wishing to divide the interval between the publication of No. 6, for September 1856, and No. 8 for March 1857, equally, its publication was delayed till December.

THE
American Journal of Education.

No. VII.—DECEMBER, 1856.

I. GRADATION OF PUBLIC SCHOOLS.

WITH SPECIAL REFERENCE TO CITIES AND LARGE VILLAGES.

There is a large amount of physical suffering and discomfort, as well as great hinderances in the proper arrangement of scholars and classes, caused by crowding the older and younger pupils into the same school-room, without seats and furniture appropriate to either; and the greatest amount of suffering and discomfort falls upon the young, who are least able to bear it, and who, in consequence, acquire a distaste to study and the school-room.

The work of education going on in such schools, cannot be appropriate and progressive. There cannot be a regular course of discipline and instruction, adapted to the age and proficiency of pupils—a series of processes, each adapted to certain periods in the development of the mind and character, the first intended to be followed by a second, and the second by a third,—the latter always depending on the earlier, and all intended to be conducted on the same general principles, and by methods varying with the work to be done, and the progress already made.

With the older and younger pupils in the same room, there cannot be a system of discipline which shall be equally well adapted to both classes. If it secures the cheerful obedience and subordination of the older, it will press with unwise severity upon the younger pupils. If it be adapted to the physical wants, and peculiar temperaments of the young, it will endanger the good order and habits of study of the more advanced pupils, by the frequent change of posture and position, and other indulgences which it permits and requires of the former.

With studies ranging from the alphabet and the simplest rudiments of knowledge, to the higher branches of an English education, a variety of methods of instruction and illustration are called for, which are seldom found together, or in an equal degree, in the same

teacher, and which can never be pursued with equal success in the same school-room. The elementary principles of knowledge, to be made intelligible and interesting to the young, must be presented by a large use of the oral and simultaneous methods. The higher branches, especially all mathematical subjects, require patient application and habits of abstraction, on the part of the older pupils, which can with difficulty, if at all, be attained by many pupils, amid a multiplicity of distracting exercises, movements and sounds. The recitations of this class of pupils, to be profitable and satisfactory, must be conducted in a manner which requires time, discussion and explanation, and the undivided attention both of pupils and teachers.

From the number of class and individual recitations, to be attended to during each half day, these exercises are brief, hurried, and of little practical value. They consist, for the most part, of senseless repetitions of the words of a book. Instead of being the time and place where the real business of teaching is done, where the ploughshare of interrogation is driven down into the acquirements of each pupil, and his ability to comprehend clearly, remember accurately, discriminate wisely, and reason closely, is cultivated and tested,—where the difficult principles of each lesson are developed and illustrated, and additional information imparted, and the mind of the teacher brought in direct contact with the mind of each pupil, to arouse, interest, and direct its opening powers—instead of all this and more, the brief period passed in recitation, consists, on the part of the teacher, of hearing each individual and class in regular order, and quick succession, repeat words from a book; and on the part of the pupils, of *saying their lessons*, as the operation is significantly described by most teachers, when they summon the class to the stand. In the mean time the order of the school must be maintained, and the general business must be going forward. Little children without any authorized employment for their eyes and hands, and ever active curiosity, must be made to sit still, while every muscle is aching from suppressed activity; pens must be mended, copies set, arithmetical difficulties solved, excuses for tardiness or absence received, questions answered, whisperings allowed or suppressed, and more or less of extempore discipline administered. Were it not a most ruinous waste of precious time,—did it not involve the deadening, crushing, distorting, dwarfing of immortal faculties and noble sensibilities,—were it not an utter perversion of the noble objects for which schools are instituted, it would be difficult to conceive of a more diverting farce than an ordinary session of a large public school, whose chaotic and discordant elements have not been reduced to system by a proper classification. The teacher, at least the conscientious teacher, thinks it any thing but a farce to him. Compelled to hurry from one study to another, the most diverse,—from one class to another, requiring a knowledge of methods altogether distinct,—from one recitation to another, equally brief and unsatisfactory, one requiring a liveliness of manner, which he does not feel and cannot assume, and the other closeness of attention and abstrac-

tion of thought, which he cannot give amid the multiplicity and variety of cares,—from one case of discipline to another, pressing on him at the same time,—he goes through the same circuit day after day, with a dizzy brain and aching heart, and brings his school to a close with a feeling, that with all his diligence and fidelity, he has accomplished but little good.

But great as are the evils of a want of proper classification of schools, arising from the causes already specified, these evils are aggravated by the almost universal practice of employing one teacher in summer, and another in winter, and different teachers each successive summer and winter. Whatever progress one teacher may make in bringing order out of the chaotic elements of a large public school, is arrested by the termination of his school term. His experience is not available to his successor, who does not come into the school until after an interval of weeks or months, and in the mean time the former teacher has left the town or state. The new teacher is a stranger to the children and their parents, is unacquainted with the system pursued by his predecessor, and has himself but little or no experience in the business : in consequence, chaos comes back again, and the confusion is still worse confounded by the introduction of new books, for every teacher prefers to teach from the books in which he studied, or which he has been accustomed to teach, and many teachers cannot teach profitably from any other. Weeks are thus passed, in which the school is going through the process of organization, and the pupils are becoming accustomed to the methods and requirements of a new teacher—some of them are put back, or made to retrace their studies in new books, while others are pushed forward into studies for which they are not prepared ; and at the end of three or four months, the school relapses into chaos. There is constant change, but no progress.

This want of system, and this succession of new teachers, goes on from term to term, and year to year—a process which would involve any other interest in speedy and utter ruin, where there was not provision made for fresh material to be experimented upon, and counteracting influences at work to restore, or at least obviate the injury done. What other business of society could escape utter wreck, if conducted with such want of system,—with such constant disregard of the fundamental principle of the division of labor, and with a succession of new agents every three months, none of them trained to the details of the business, each new agent acting without any knowledge of the plan of his predecessor, or any well settled plan of his own ! The public school is not an anomaly, an exception, among the great interests of society. Its success or failure depends on the existence or absence of certain conditions ; and if complete failure does not follow the utter neglect of these conditions, it is because every term brings into the schools a fresh supply of children to be experimented upon, and sweeps away others beyond the reach of bad school instruction and discipline ; and because the minds of some of these children are, for a portion of each day, left

to the action of their own inherent forces, and the more kindly influences of nature, the family and society.

Among these conditions of success in the operation of a system of public schools, is such a classification of the scholars as shall bring a larger number of similar age and attainments, at all times, and in every stage of their advancement, under teachers of the right qualifications, and shall enable these teachers to act upon numbers at once, for years in succession, and carry them all forward effectually together, in a regular course of instruction.

The great principle to be regarded in the classification, either of the schools of a town or district, or of scholars in the same school, is equality of attainments, which will generally include those of the same age. Those who have gone over substantially the same ground, or reached, or nearly reached the same point of attainment in several studies, should be put together, and constitute, whenever their numbers will authorize it, one school. These again should be arranged in different classes, for it is seldom practicable, even if it were ever desirable, to have but one class in every study in the same grade of school. Even in very large districts, where the scholars are promoted from a school of a lower grade to one of a higher, after being found qualified in certain studies, it is seldom that any considerable number will have reached a common standard of scholarship in all their studies. The same pupil will have made very different progress in different branches. He will stand higher in one and lower in another. By arranging scholars of the same general division in different classes, no pupil need be detained by companions who have made, or can make less progress, or be hurried over lessons and subjects in a superficial manner, to accommodate the more rapid advancement of others. Although equality of attainment should be regarded as the general principle, some regard should be paid to age, and other circumstances. A large boy of sixteen, from the deficiency of his early education, which may be his misfortune and not his fault, ought not to be put into a school or class of little children, although their attainments may be in advance of his. This step would mortify and discourage him. In such extreme cases, that arrangement will be best which will give the individual the greatest chance of improvement, with the least discomfort to himself, and hindrance to others. Great disparity of age in the same class, or the same school, is unfavorable to uniform and efficient discipline, and the adaptation of methods of teaching, and of motives to application and obedience. Some regard, too, should be had to the preferences of individuals, especially among the older pupils, and their probable destination in life. The mind comes into the requisitions of study more readily, and works with higher results, when led onward by the heart; and the utility of any branch of study, its relations to future success in life, once clearly apprehended, becomes a powerful motive to effort.

Each class in a school should be as large as is consistent with thoroughness and minuteness of individual examination, and practi-

cable, without bringing together individuals of diverse capacity, knowledge, and habits of study. A good teacher can teach a class of forty with as much ease as a class of ten, and with far more profit to each individual, than if the same amount of time was divided up among four classes, each containing one-fourth of the whole number. When the class is large, there is a spirit, a glow, a struggle which can never be infused or called forth in a small class. Whatever time is spent upon a few, which could have been as profitably spent on a larger number, is a loss of power and time to the extent of the number who were not thus benefited. The recitations of a large class must be more varied, both as to order and methods, so as to reach those whose attention would wander if not under the pressure of constant excitement, or might become slothful from inaction or a sense of security. Some studies will admit of a larger number in a class than others.

The number of classes for recitation in the same apartment, by one teacher, should be small. This will facilitate the proper division of labor in instruction, and allow more time for each class. The teacher intrusted with the care of but few studies, and few recitations, can have no excuse but indolence, or the want of capacity, if he does not master these branches thoroughly, and soon acquire the most skillful and varied methods of teaching them. His attention will not be distracted by a multiplicity and variety of cares, pressing upon him at the same time. This principle does not require that every school should be small, but that each teacher should have a small number of studies and classes to superintend.

In a large school, properly classified, a division of labor can be introduced in the department of government, as well as in that of instruction. By assigning the different studies to a sufficient number of assistants, in separate class-rooms, each well qualified to teach the branches assigned, the principal teacher may be selected with special reference to his ability in arranging the studies, and order of exercises of the school, in administering its discipline, in adapting moral instruction to individual scholars, and superintending the operations of each class-room, so as to secure the harmonious action and progress of every department. The talents and tact required for these and similar duties, are more rarely found than the skill and attainments required to teach successfully a particular study. When found, the influence of such a principal, possessing in a high degree, the executive talent spoken of, will be felt through every class, and by every subordinate teacher, giving tone and efficiency to the whole school.

To facilitate the introduction of these, and similar principles of classification, into the organization and arrangements of the schools of a town or district, as fast and as far as the circumstances of the population will admit, the following provisions should be engrafted into the school system of every state.

1. Every town should be clothed with all the powers requisite to establish and maintain a sufficient number of schools of different grades, at convenient locations, to accommodate all the children re-

siding within their respective limits—irrespective of any territorial division of the town into school districts.

2. Should provision be made for the creation of territorial school districts, a gradation of districts should be recognized, and every district having over sixty children of an age to attend school, should be obliged to maintain a primary school under a female teacher for the young pupils, and provide a secondary school for the older and more advanced pupils.

3. No village, or populous district, in which two or more schools of different grades for the younger and older children respectively, can be conveniently established, should be sub-divided into two or more independent districts.

4. Any two or more adjoining districts, in the same, or adjoining towns, should be authorized to establish and maintain a secondary school for the older and more advanced pupils of such districts, for the whole, or any portion of the year.

5. Any district, not having children enough to require the permanent establishment of two grades of schools, should be authorized to determine the periods of the year in which the public school shall be kept, and to determine the age and studies of the children who shall attend at any particular period of the year, and also to send the older pupils to the secondary school of an adjoining district.

The extent to which the gradation of schools can be carried, in any town or district, and the limit to which the number of classes in any school can be reduced, will depend on the compactness, number, and other circumstances of the population, in that town or district, and the number and age of the pupils, and the studies and methods of instruction in that school. A regular gradation of schools might embrace Primary, Secondary and High Schools, with Intermediate Schools, or departments, between each grade, and Supplementary Schools, to meet the wants of a class of pupils not provided for in either of the above grades.

1. Primary Schools, as a general rule, should be designed for children between the ages of three and eight years, with a further classification of the very youngest children, when their number will admit of it. These schools can be accommodated, in compact villages, in the same building with the Secondary or High School; but in most large districts, it will be necessary and desirable to locate them in different neighborhoods, to meet the peculiarities of the population, and facilitate the regular attendance of very young children, and relieve the anxiety of parents for their safety on their way to and from school. The school-room should be light, cheerful, and large enough for the evolutions of large classes—furnished with appropriate seats, furniture, apparatus and means of visible illustration, and having a retired, dry and airy play-ground, with a shelter to resort to in inclement weather, and with flower borders, shrubbery and shade trees, which they should be taught to love and respect. The play-ground is as essential as the school-room, for a Primary School, and is indeed the uncovered school-room of physical and moral educa-

tion, and the place where the manners and personal habits of children can be better trained than elsewhere. With them, the hours of play and study, of confinement and recreation, must alternate more frequently than with older pupils. To teach these schools properly,—to regulate the hours of play and study so as to give variety, vivacity, and interest to all of the exercises, without over-exciting the nervous system, or over-tasking any faculty of mind or body,—to train boys and girls to mild dispositions, graceful and respectful manners, and unquestioning obedience,—to cultivate the senses to habits of quick and accurate observation and discrimination,—to prevent the formation of artificial and sing-song tones,—to teach the use of the voice, and of simple, ready and correct language, and to begin in this way and by appropriate exercises in drawing, calculation, and lessons on the properties and classification of objects, the cultivation of the intellectual faculties,—to do all these things and more, require in the teacher a rare union of qualities, seldom found in one in a hundred of the male sex, and to be looked for with the greatest chance of success among females, “in whose own hearts, love, hope and patience, have first kept school.”

The earlier we can establish, in every populous district, primary schools, under female teachers, whose hearts are made strong by deep religious principle,—who have faith in the power of Christian love steadily exerted to fashion anew the bad manners, and soften the harsh and self-willed perverseness of neglected children,—with patience to begin every morning, with but little if any perceptible advance beyond where they began the previous morning,—with prompt and kind sympathies, and ready skill in music, drawing, and oral methods, the better it will be for the cause of education, and for every other good cause.

2. Secondary Schools should receive scholars at the age of eight years, or about that age, and carry them forward in those branches of instruction which lie at the foundation of all useful attainments in knowledge, and are indispensable to the proper exercise and development of all the faculties of the mind, and to the formation of good intellectual tastes and habits of application. If the primary schools have done their work properly, in forming habits of attention, and teaching practically the first uses of language,—in giving clear ideas of the elementary principles of arithmetic, geography, and the simplest lessons in drawing, the scholars of a well conducted secondary school, who will attend regularly for eight or ten months in the year, until they are twelve years of age, can acquire as thorough knowledge of reading, arithmetic, penmanship, drawing, geography, history, and the use of the language in composition and speech, as is ever given in common or public schools, as ordinarily conducted, to children at the age of sixteen. For this class of schools, well qualified female teachers, with good health, self-command, and firmness, are as well fitted as male teachers. But if the school is large, both a male and female teacher should be employed, as the influence of both are needed in the training of the moral character and manners.

Schools of this grade should be furnished with class-rooms for recitations, and if large, with a female assistant for every thirty pupils.

3. High Schools should receive pupils from schools of the grade below, and carry them forward in a more comprehensive course of instruction, embracing a continuation of their former studies, and especially of the English language, and drawing, and a knowledge of algebra, geometry and trigonometry, with their applications, the elements of mechanics and natural philosophy and chemistry, natural history, including natural theology, mental and moral science, political economy, physiology, and the constitution of the United States. These and other studies should form the course of instruction, modified according to the sex, age, and advancement, and to some extent, future destination of the pupils, and the standard fixed by the intelligence and intellectual wants of the district—a course which should give to every young man a thorough English education, preparatory to the pursuits of agriculture, commerce, trade, manufactures, and the mechanical arts, and if desired, for college; and to every young woman, a well disciplined mind, high moral aims, and practical views of her own duties, and those resources of health, thought, manners and conversation, which bless alike the highest and lowest stations in life. All which is now done in private schools of the highest grade, and where the wants of any considerable portion of the community create such private schools, should be provided for in the system of public schools, so that the same advantages, without being abridged or denied to the children of the rich and the educated, should be open at the same time to worthy and talented children of the poorest parent. In some districts a part of the studies of this grade of schools might be embraced in the Secondary Schools, which would thus take the place of the High School; in others, the High School could be open for only portions of the year; and in others, two departments, or two schools, one for either sex, would be required. However constituted, whether as one department, or two, as a distinct school, or as part of a secondary school, or an ordinary district school, and for the whole year, or part of the year, something of the kind is required to meet the wants of the whole community, and relieve the public schools from impotency. Unless it can be engrafted upon the public school system, or rather unless it can grow up and out of the system, as a provision made for the educational wants of the whole community, then the system will never gather about it the warmth and sustaining confidence and patronage of all classes, and especially of those who know best the value of a good education, and are willing to spend time and money to secure it for their own children.

4. Intermediate Schools or departments will be needed in large districts, to receive a class of pupils who are too old to be continued, without wounding their self-esteem, in the school below, or interfering with its methods of discipline and instruction, and are not prepared in attainments, and habits of study, or from irregular attendance, to be arranged in the regular classes of the school above.

Connected with this class of schools there might be opened a

school or department for those who cannot attend school regularly, or for only a short period of the year, or who may wish to attend exclusively to a few studies. There is no place for this class of scholars, in a regularly constituted, permanent school, in a large village.

5. Supplementary Schools, and means of various kinds should be provided in every system of public instruction, for cities and large villages, to supply deficiencies in the education of individuals whose school attendance has been prematurely abridged, or from any cause interfered with, and to carry forward as far and as long as practicable into after life, the training and attainments commenced in childhood.

Evening Schools should be opened for apprentices, clerks, and other young persons, who have been hurried into active employment without a suitable elementary education. In these schools, those who have completed the ordinary course of school instruction, could devote themselves to such studies as are directly connected with their several trades or pursuits, while those whose early education was entirely neglected, can supply, to some extent, such deficiencies. It is not beyond the legitimate scope of a system of public instruction, to provide for the education of adults, who, from any cause, in early life were deprived of advantages of school instruction.

Libraries, and courses of familiar lectures, with practical illustrations, collections in natural history, and the natural sciences, a system of scientific exchanges between schools of the same, and of different towns,—these and other means of extending and improving the ordinary instruction of the school-room and of early life, ought to be provided, not only by individual enterprise and liberality, but by the public, and the authorities entrusted with the care and advancement of popular education.

One or more of that class of educational institutions known as "Reform Schools," "Schools of Industry," or "Schools for Juvenile Offenders," should receive such children, as defying the restraining influence of parental authority, and the discipline and regulations of the public schools, or such as are abandoned by orphanage, or worse than orphanage, by parental neglect or example, to idle, vicious and pilfering habits, are found hanging about places of public resort, polluting the atmosphere by their profane and vulgar speech, alluring, to their own bad practices, children of the same, and other conditions of life, and originating or participating in every street brawl and low-bred riot. Such children cannot be safely gathered into the public schools; and if they are, their vagrant habits are chafed by the restraints of school discipline. They soon become irregular, play truant, are punished and expelled, and from that time their course is almost uniformly downward, until on earth there is no lower point to reach.

Accustomed, as many such children have been from infancy, to sights and sounds of open and abandoned profligacy, trained to an utter want of self-respect, and the decencies and proprieties of life, as exhibited in dress, person, manners and language, strangers to those motives of self-improvement which spring from a sense of so-

cial, moral and religious obligation, their regeneration involves the harmonious co-operation of earnest philanthropy, missionary enterprise, and sanctified wisdom. The districts of all our large cities where this class of children are found, are the appropriate field of home missions, of unobtrusive personal effort and charity, and of systematized plans of local benevolence, embracing friendly intercourse with parents, an affectionate interest in the young, the gathering of the latter into week-day, infant, and primary schools, and schools where the use of the needle, and other forms of labor appropriate to the sex and age of the pupils can be given, the gathering of both old and young into Sabbath schools and worshipping assemblies, the circulation of books and tracts, of other than a strictly religious character, the encouragement of cheap, innocent and humanizing games, sports and festivities, the obtaining employment for adults who may need it, and procuring situations as apprentices, clerks, &c., for such young persons as may be qualified by age, capacity and character. By individual efforts and the combined efforts of many, working in these and other ways, from year to year, these moral jungles can be broken up,—these infected districts can be purified,—these waste places of society can be reclaimed, and many abodes of penury, ignorance and vice can be converted by education, economy and industry, into homes of comfort, peace and joy.

[The foregoing considerations respecting the disadvantages and evils of gathering children of differing ages and attainments in the same school-room, the principles of classification to be regarded in establishing a gradation of schools, and the supplementary agencies of christian charity which should be aided out of the public means, as part of the system of popular education, in every large city and crowded neighborhood—were first embodied by the author in 1838 as a part of an Address, which he was called on to deliver in discharge of his duties as Secretary of the Board of Commissioners of Common Schools in Connecticut, in the principal cities and villages of that State. It has been printed in various educational documents prepared by him since, in the discharge of official duties, and repeated substantially in over fifty cities in different parts of the country, where the establishment of a system of public schools was under discussion. It is introduced into the Journal, because the general views herein presented, are still applicable to a large number of cities and villages.]

II. OFFICIAL EXPOSITION OF COMMON, OR PUBLIC SCHOOLS,

IN THE UNITED STATES.

We continue and complete so far as our material will enable us to do, in this number an exposition of the condition of Common or Public Schools in each State, with the means and suggestions for their improvement, as set forth in official and legislative documents and addresses, principally in 1855-56.

In a subsequent article we shall present a similar exposition of the practical working, and prospects of the system of public instruction in the principal Cities of each state.

We have abstained from making any comments on the statistics and suggestions contained in these extracts—preferring that our readers should form their own opinions as to the condition and prospects of the public schools, and the efficiency of the agencies which are applied for their improvement.

As an extra edition of this number of the Journal will be printed, we have embodied in this article the extracts contained in our September number on the same subject. We shall give our subscribers more than an equivalent in additional matter.

ALABAMA.

Report of the Superintendent of Education [W. F. PERRY,] of the State of Alabama, to the Governor, Oct. 1, 1855. 36 pages.

This is the first Report of the Superintendent of Education, and is confined to an account of preliminary operations.

DIFFICULTIES IN ORGANIZING AN EFFICIENT SYSTEM. The building up of an efficient educational system, adapted to the various wants and circumstances of a large community, has never been accomplished, hitherto, but by the patient, unremitting efforts of successive years. The experience of other states abundantly proves that liberal appropriations and legislative enactments can not, of themselves, impart to such a system that vitality and energy which are essential to its ultimate success. It must rely mainly for these upon enlightened public opinion,—upon a rational, all-pervading interest on the subject, which springs not up spontaneously or from sudden impulse, but is itself the result of a sort of process of education, by which the whole people are brought to esteem the proper training of those who are to come after them, as their paramount duty and highest earthly concern.

EDUCATIONAL FUNDS. The two funds placed under his control, under the general title of Educational Fund, were created at different times, were subject to different laws, and sustained different relations. One was the property of the State, consolidated and unchanging in amount; the other belonged to the town-

ships in their individual capacity, distributed among them in all possible amounts, ranging from a few cents per annum to many hundreds of dollars, and was constantly accumulating. A small portion of the latter was still under the management of the banks; another and much the larger was in the treasury; a third, in the form of sixteenth section notes, was found in the office of the Comptroller of Public Accounts, and scattered over the State in the hands of trustees, withheld under special laws, or in defiance of law.

To unite these two funds thus situated, and bring them under one general system of accounts which would do full justice to all, and more than justice to none, cost an amount of thought and labor, which he had not been prepared to expect, and which few, perhaps, can now realize.

VISITATION BY SUPERINTENDENT. The superintendent has thus far found time to traverse forty-five out of fifty-two of the counties, generally delivering two addresses in each, and has it in contemplation to visit the remainder before his term of office expires. These visits, though hurried, and often unavoidably made at the most unfavorable times for obtaining audiences, and enlisting public attention, are believed to have been attended with advantage by no means inconsiderable.

RESULTS OF PERSONAL OBSERVATION. That which most prominently strikes the attention of one favored with such a field of observation, is the total inadequacy of the means hitherto employed, ever to accomplish what all acknowledge to be desirable—a general diffusion of knowledge.

Alabama, it is true, can point with just pride to her colleges and high schools, her institutes and academies. Perhaps in no State of the South have individual citizens and communities exhibited more liberality of sentiment. No where have greater personal exertions and sacrifices been made to advance the interests of education. The undersigned would be the last to stifle such sentiments, or to disparage the benefits which have resulted from those sacrifices and exertions. The melancholy reflection still, however, obtrudes itself, that three-fourths of the youth of the State have hitherto either gone without instruction entirely, or have been crowded into miserable apologies for school-houses, without comfortable seats, without desks or black-boards, often without the necessary text-books, and still oftener without competent teachers.

It would be the grossest arrogance to say that the adoption of the present system has supplied all these wants. It has certainly imparted a powerful impulse to the common school operations of the State. It has increased the attendance upon most of the schools previously kept up, and has led to the establishment of many, where none before existed. But the improvement thus far, is in the *extent* to which educational facilities have been diffused, rather than in the *character* of the facilities themselves. The increase of the school fund may have crowded the houses, but it has not always dispelled blank cheerlessness from its old dominion. It has not led to the adoption of the policy which controls men under an increase of private gains—to pull down the old barns and build greater. It has added largely to the demand for teachers' services; but it has not imparted the necessary qualifications to those who are engaged in the mighty field of labor. "Owls and bats" are still employed "to teach young eagles how to fly, because they will work cheap."

There is another conviction to which the undersigned has been forced by extensive intercourse and correspondence with the masses of the people. It is that the present educational movement is not in advance of public sentiment—that the people of the State, by an overwhelming majority, are favorable to the principle of public education, and are prepared to sustain the legislature in all judicious measures for giving additional efficiency to the system already in existence.

REASONS FOR PERSEVERANCE. The following propositions are, in conclusion, respectfully submitted, as containing some of the more prominent considerations in favor of the permanent adoption of that line of policy by the State:

1. The intervention and effort of society in its organized political capacity, constitutes the only means by which a universal diffusion of knowledge can ever be secured. Neither the history of the past, nor the circumstances of the present, reveal any other agency adequate to its accomplishment. The question of a continuance or discontinuance of such effort here, amounts to a direct issue between general intelligence on the one hand, and wide spread, deplorable ignorance on the other.

2. No obstacles in the way of the ultimate attainment of this great object exists in Alabama, which have not been encountered and triumphed over in other States. Indeed the achievements of the present year will challenge comparison with what has ever been accomplished, elsewhere, with the same means and in the same length of time.

3. General intelligence and virtue are included in the very idea of a govern

ment where the people are the great depositories of power, and the ultimate tribunal to which all questions of national policy are referred. "They who govern, must know how to govern; and they who govern rightly must themselves be right." Mr. Mansfield says, "There is a positive antagonism between the possession of civil power requiring the highest exercise of reason, and the want of that intelligence and integrity, which are essential to the right use of reason itself."

It will not be considered improper to introduce in this connexion, the opinion of one of the founders of the government, and the great republican philosopher of his day. Mr. Jefferson, in a letter to Col. Yancey, January 16, 1816, uses this language: "If a nation expects to be ignorant and free, in a state of civilization, it expects what never was and never will be. The functionaries of every government have propensities to command at will, the liberty and property of their constituents. There is no safe deposit for these but with the people themselves; nor can they be safe with them, without information. When the press is free and every man able to read, all is safe."

4. Aside from the overwhelming motives of self-preservation, which apply to nations as to individuals, every consideration of sound domestic economy demands at the hands of government a liberal encouragement of the means of education. The State that scatters broadcast the seeds of knowledge most profusely, will ever reap the richest harvest of golden fruit, in the increased thrift and industry, prosperity and happiness of its people.

5. And finally, it is not an invasion of the rights of property for the government to assess upon each individual his share of the expenses of educating the children of the community, up to such a point, as the nature of the institutions under which he lives, and the well-being of society require.

To perfect the system of Public Schools, the Superintendent recommends the appointment of a single Commissioner instead of the Board, for each County; the publication at the capitol of a Monthly Educational Journal; the holding of Teachers' Institutes, and the establishment of a State Normal School.

ARKANSAS.

We have received no school document, official or legislative, relative to the Public Schools of this State.

CALIFORNIA.

Fifth Annual Report of the Superintendent of Public Instruction [Paul K. Hubbs] of the State of California. January 17, 1866.

CONDITION OF PUBLIC SENTIMENT. Public sentiment was never more thoroughly aroused than at the present time, in respect to the subject of education. From the Colorado to the Klamath, from the Nevada Alps to the ocean, the most distinguished citizens of this State are laboring to extend the influence and elevate the condition of the common school.

With this healthy state of the public mind, and in view of the fact, that we are, in respect to common school education, not only very far in arrear to our Atlantic brethren, but also to civilized Europe, there never has been a time when the support of the representatives of the people to this great effort was more imperiously called for.

SCHOOL FUND. We are nominally possessed of a large school property, but practically do not receive enough income to pay the salaries of three hundred and six teachers for two weeks' work in the six months of their labor, for which the small sum of \$28,269.60 was apportioned by the State Board of Education on the 1st instant, being the entire income to the State School Fund for the past half year.

SCHOOL ATTENDANCE. The Annual Report from this department to the Legislature of 1855, held this language; "Three-fourths of the children of our State are growing up devoid of learning to read or write." "So far from expecting a future increase proportioned to the imminent wants of this great community, it is evident that without radical and positive change in the supplies, by legislative action, we shall have a meager return for the present year from the schools, many of which are now being abandoned for lack of support." The Legislature of 1855, did not extend the aid solicited from this department, and many schools have been abandoned for lack of support. In the city of San Francisco, where the effort to sustain common schools has deservedly won her a world-wide reputation, (and as a natural consequence amid all her disasters, put her bonds at a premium,) in that

city there is a daily average of 2,938 children reported out of school; and in the county districts of San Francisco, forty-five only of four hundred and nine are in the school. In Stockton, nearly one-half are in daily average attendance. Sacramento City, two in five; and Marysville, but one in three—no doubt in many cases owing to the wilful neglect (if so mild a term can properly be used,) of the parent or guardian. In some places, as will appear by the appendix, but one in seven are in daily attendance at the school.

Of the 26,170 resident children reported, 6,422 form the daily average attendance at the common schools. The private schools will not probably increase the number beyond 7,000 in all. What is to be done with the 18,000? They are under the charge of this department, subject to legislative action.

SCHOOL LANDS. It is the sheerest folly to talk about our great resources in public school property, whilst no proper measures are taken to secure it from loss, much less to realize the income due from it.

The Act of Congress in relation to survey and pre-emption, (March 3d, 1853,) provides, that two sections of every thirty-six, when surveyed, be set apart for the school purposes of the township.

Of the 500,000 acres donated under the Act of Congress, April 4th, 1841, and diverted by our Constitution to school purposes, the greater part remains undisposed of.

The aid to the University that we hope some day to see established, from lands donated by the General Government, like that from nearly all the school lands, continues a deferred hope, upon which the mind may look at at so great a distance as to realise little else than the clouds that environ it.

SEMINARY LANDS. The Seminary lands awaiting only the U. S. surveys, to be fully and conclusively located, I recommend to be placed at once under the entire title, control, and management of the Board of Regents of the University, which I can not doubt the Legislature will provide for at an early day, in "An Act to establish the California State University."

SCHOOL LAW. We have no free school system. Cities are empowered, under certain restrictions, to raise means, and, to a certain extent, maintain free schools. The counties may or may not levy a limited tax, to maintain schools, depending upon the views of the Board of Supervisors, a board that has done more good in checking extravagant county expenditures, than was anticipated, even by the best friends of the supervisory system; but with heavy old county debts too often pressing upon them, they are timid, and too frequently parsimonious in respect to the schools. In some densely settled counties, no tax whatever has been levied for school purposes; moreover the supervision of the accounts for school expenditure of the county, is not as thorough by the Board of Supervisors as could be desired, otherwise the returns to this department would be more explicit and satisfactory.

SCHOOL BOOKS. Immediately upon entering upon the duties of this office, I designated, in accordance with the Act, a uniform series of books to be used in the schools. The recommendation has not been sustained, and the Superintendent has no power to enforce it. The books designated comprised the very latest and most improved works used in the Atlantic States; but our bookstores were so crowded with the refuse books thrown out at the East, at low prices there, at least, that the most valuable works, adapted to the advanced progress of the common school system, could scarcely be had.

SECTARIAN ACTION. The Superintendent has no adequate power under the existing law, to check as should be done, any sectarian bias or control, exercised upon the public schools. A sectarian war is in embryo, which if not quieted at once, will, combined with other causes, produce a lingering death, slowly but surely, to popular education in this State. The rejection of well qualified teachers at one time, because of their religious faith, produces a reacting opposite extreme at another time, and the whole catalogue of sects become excited to have their own members used as teachers, and their own churches as school houses. This is all wrong, and the result will be disastrous.

DENOMINATIONAL COLLEGES. Whilst we thus maintain intact, steadily but firmly, the proper administration of the common school system, let us not undervalue the efforts making by, emphatically, the good men of our land, in rearing colleges worthy the support of the State, though established by religious influence and controlled by religious domination. Three colleges have been chartered in accordance with law during the past year: one at Santa Clara, under charge of the Methodist Society; one at Oakland, under charge of the Presbyterian Church, and one at San Jose, under care of those who profess the Catholic faith. They

are all struggling in their infancy, but destined to much good. I recommend that a liberal appropriation be made to each of these colleges.

CONNECTICUT.

Report of the Superintendent of Common Schools [John D. Philbrick] to the General Assembly, May, 1856. 198 pages.

This document, besides the Annual Report of the Superintendent, embraces an Appendix of great value, viz., Reports of Visits and Educational Lectures by Agents appointed by the Superintendent; Extracts from School Visitors (Local Committee of Supervision) Reports; An Educational Tract—a Teacher's Appeal to the Parents of his Pupils; Circular to School Visitors respecting certain proposed changes in the School Laws; An Argument for Free Schools from Horace Mann's Tenth Report as Secretary of Massachusetts Board of Education; Places and Descriptions of School-houses; Specimens of Rules and Regulations for Schools; Inquiries addressed to School Visitors; Tables of Returns by School Visitors; List of Teachers' Conventions or Institutes held in Connecticut since 1853.

LABORS OF SUPERINTENDENT. These include personal attention and teaching in the Normal Schools; preparation for and conducting eight Teachers' Institutes; delivering addresses in different counties; answering questions as to the construction of the School Law; deciding claims for payment of public money forfeited; consulting with teachers and committees; assisting in a revision of the School Law, and in editing of the Common School Journal. It is not to be wondered at, that the health of the Superintendent should have broken down under these manifold and arduous labors.

TEACHERS' INSTITUTES. Eight Institutes were held, one in each county, with an attendance of 735 members. The added experience and observation of another year tend to confirm the favorable opinion I have heretofore entertained in relation to Teachers' Institutes. If rightly conducted, they are instruments of much good, not only to the teachers in attendance, but also to the communities in which they meet. A recent writer has, very appropriately I think, called them "distributing offices," by means of which the various improvements in teaching and school management are disseminated through all parts of the State.

STATE NORMAL SCHOOL. This institution has continued in a prosperous condition during the past year, and it is believed that each year adds to the conviction that its establishment was the result of a true foresight. During the last winter, the number in attendance was unusually large, being one hundred and eighty.

Many of the graduates of this school are making themselves eminently useful as teachers, and a few are at the head of some of our largest and best graded schools.

During the past year nearly four hundred of the teachers employed within the State have been, for a longer or shorter period, members of the State Normal School, and many of these have given a high degree of satisfaction.

EDUCATIONAL TRACTS. About 1000 copies of an excellent Tract on the consolidation of districts, was printed and circulated gratuitously. Nearly 5000 copies of another Tract, entitled "A Teacher's appeal to the parents of his pupils," have been printed and circulated at a trifling charge.

It was thought that these little messengers, if sent abroad, would find an audience with many who would not, otherwise, give a listening ear or lend a co-operating hand in behalf of the great work in which we are engaged.

Having great confidence in the efficacy of this mode of operating upon the people, I would most respectfully and earnestly urge that a reasonable sum may be appropriated for the purpose of enabling me to avail myself, still more extensively, of this great, but effectual, way of awakening interest and securing right action.

COMMON SCHOOL JOURNAL. The Journal has been regularly published during the past year, and the several numbers have been sent to the acting School Visitors in the various localities, in accordance with provision made by the General Assembly. I am confirmed in the opinion that it is a highly important and useful auxiliary in the educational department. Going, as it does, into every School

Society of the State, it proves a highly valuable medium for the diffusion of intelligence in relation to schools, methods of teaching, &c.

If an appropriation should be made whereby a copy of the Journal could be sent to every School District within the limits of the State, I feel convinced that the result would be so favorable and extensive, as to afford ample assurance that the investment was a judicious one.

EDUCATIONAL LECTURES. The provision whereby the Superintendent is authorized to cause an address, on the subject of Common Schools, in each of the School Societies of the State, is deemed a very important one, and eminently calculated to diffuse correct ideas and to awaken an interest on the part of the people. Whatever efforts shall tend to bring the great and important interests of popular education directly before the minds of the people, and cause them to reflect upon the subject, cannot fail of producing highly beneficial results.

TEACHERS. A good school is the product of the combined and harmonious operation of various agencies. Of these, by far the most important is the teacher, so that the apparently extravagant maxim, "as is the teacher so is the school," is essentially true. The teacher is to the school as the engineer to the engine—the master to the vessel—the commander to the army. School-house, text-books, apparatus, classification, attendance, supervisory officers, may possess every requisite of excellence, and yet, for the want of a suitable teacher, the school may be but a name. No good instruction will be given, no good habits formed, no moral or mental discipline imparted, no desire for knowledge inspired, and all the costly and careful preparation for education, will avail but little in the hands of an incompetent teacher. On the contrary, the accomplished teacher will almost create a good school in the face of every obstacle. Pupils can not come in contact with him without being bettered. His power and skill will turn the very defectiveness of the means employed, into the means of improvement.

COMPENSATION OF TEACHERS. Called to perform duties of the most arduous, responsible and important nature, teachers are entitled to a rate of compensation as great as the same talents and devotion would secure in any other department. I would not be understood as advocating any degree of extravagance on this point, but would simply contend that if the business of training the immortal mind is as important as any other, then the inducements for those who engage in the work should be equal to those held out in any other department of labor.

The average wages of female teachers, is about \$17 per month, from which, if we deduct \$2.50 per week for board, we shall have only \$7 for the poor teacher in return for four weeks of earnest and devoted labor. And, I would ask the candid and intelligent citizens of our State, if this looks like true liberality or true wisdom? Will this small rate of compensation secure a high order of talent? Will it warrant the expenditure of time and money essential for a proper course of preparatory training?

CO-OPERATION WITH TEACHERS. However important and weighty the teacher's duties and responsibilities may be, and however faithfully they may be met, they can never compensate for deficiency on the part of parents and citizens. I have time now only to designate a few particulars in which parents may co-operate with teachers in the great work of education, and thus indicate their appreciation of the true importance of their vocation.

1. By securing the constant and seasonable attendance of pupils.
2. By a reasonable compensation to teachers, cheerfully and promptly rendered.
3. By a seasonable and full supply of the necessary text books, and all necessary apparatus.
4. By encouraging in the pupils habits of diligence and obedience.
5. By cultivating a friendly acquaintance with teachers.
6. By visiting the schools.

SCHOOL-HOUSES. The school-house everywhere stands out as the symbol and exponent of education. It is a visible and palpable index of the popular sentiment on the subject. Where there is not sufficient interest to build a good school-house, it is idle to look in that place for other elements of a good school. If the old house as it was, with all its inconveniences and discomforts, is thought to be good enough, the old price for teachers is good enough, the same old books are good enough, four months schooling a year is enough.

During the year forty-one new school-houses were erected, at an expense of \$120,000. In some of the districts where the spirit of progress has triumphed, and the old structure has given place to the new, a degree of perseverance and energy has been exhibited, rising almost to heroism. In one, fifteen meetings were warned in succession, before the victory was achieved. Scarcely a district can be found

which does not contain some penurious individuals, who will seize upon any pretext to oppose the outlay of a dollar for a school-house. Though the rights of such persons should be respected, they should not be permitted to stand in the way of educational improvement. If the erection of a suitable school-house is to cause opposition, the sooner it comes the sooner peace comes.

LENGTH OF SCHOOL TERM. The law requires the school in each district to be taught for six months in the year. The Superintendent recommends that the minimum be set at eight months.

GRADATION OF SCHOOLS. It facilitates an economical classification. A school is classified as well as it can be, when those scholars who are nearly of the same age and advancement, are assigned to the same class, and are all employed upon the proper studies. In a common district, or mixed school, consisting of fifty scholars, of all ages, as many classes are required as in a school of six times the number,—though in the latter, each class would be six times as large. From twenty to thirty is a proper number for a class, with a good teacher.

Suppose we have six hundred scholars, of all ages, residing within a reasonable distance from a central point, and suppose we erect, for their accommodation, a union school-house, containing twelve rooms, each room capable of accommodating fifty scholars. Now, after an examination, let these six hundred scholars be distributed in these twelve rooms, according to their advancement. Let the fifty in each room be again subdivided into two classes of twenty-five each,—a first class and a second class, according to attainments. Let all in the same class attend to precisely the same branches of study. Let the Principal or Superintendent have the general supervision and control of the whole, and let him have one male assistant or sub-principal, and ten female assistants, one for each room. Or, if it be thought best, let the rooms for the upper departments be large enough for one hundred pupils, with a recitation room attached, for two teachers. The scholars in the lowest room will consist of very small children, just beginning to learn to read and spell. Those in the next room will be a little older and a step higher in their studies,—and so on until in the upper department we shall find young ladies and young gentlemen engaged in the pursuit of studies appropriate to a High School. Those in the same class have, invariably, the same class books, and each department is supplied with a teacher, especially adapted to its grade and studies, and furnished with all the requisite books and apparatus. This is what is meant by a thoroughly graded school, each class being just large enough to enable the teacher to work to advantage, and no one being so large as to be unmanageable. Several schools, answering very nearly to this description, are now to be found in Connecticut.

What are the advantages of such an arrangement over those which could be enjoyed by the scholars, if they were in twelve separate, mixed schools? In the mixed schools of fifty scholars, the number of different recitations and exercises during the day would be about twenty-four. The opening and closing of school, the recesses and necessary interruptions, would consume upwards of an hour, so that the average time left for each recitation would not much exceed ten minutes. In such a school the teacher is obliged to hurry from one exercise to another, with great rapidity, and of course, during the day, perform a great diversity of labor, from teaching the alphabet, to the highest class in algebra.

In the school, graded as I have described, the teacher has but two classes, and not more than six or eight recitations during the day. Consequently, there will be time enough to give to each scholar a thorough drill, without hurry or confusion. In other words, thorough teaching is greatly facilitated. The time of teacher and pupils is all used to the best advantage. While one of the classes is reciting, the other is preparing for recitation—this process alternating all day—the pupils having just time enough for study, and the teacher time enough for instructing each class. The advantages in the discipline and government are no less striking than those of instruction.

In the mixed school, a uniform system of management for the smallest and largest pupils can not be adopted. That kind of discipline which would be well adapted to the smallest children, would not be suitable for the largest. Hence, a much greater amount of labor and skill are required in the government of a mixed school of fifty scholars, than of the same number of scholars in a graded school; and all the teacher's force which is absorbed in government, in just so much subtracted from his available force for instruction.

Another advantage of this system is found in the facility afforded of employing teachers adapted to the different grades. To succeed well in a mixed school, requires a rare combination of qualifications—capacity to teach and interest the youngest, and also the oldest. But it is not so difficult to find teachers who are well adapted to a special department. In a graded school, each teacher has a

small number of different branches to teach, and, consequently, can do those so much the better.

The establishment and liberal support of graded schools, have given great satisfaction, and fully answered the expectations of their advocates, and no community which has given the system a fair trial, with a competent principal and well selected corps of teachers, could be induced to abandon it, and return to the old plan.

MORAL CULTURE. The want of a better moral training in our system of education is already beginning to be felt. It is already to be seen that we have exalted intellectual capacity above moral principles; while virtue ought to be education's paramount object, and ability subordinate. I note it as one of the encouraging signs of the times, that the importance of greater attention to moral training in our schools, is beginning to be agitated with earnestness and effect. A portion, and generally the most eloquent portion of nearly every educational report that reaches us, is devoted to this topic. The light which, for centuries, has been seen on the mountain summits has, at length, approached the valleys.

Milton spoke on the subject almost with the accents of inspiration. These are his words: "The end of learning is to repair the ruin of our first parents, by regaining to know God aright, and out of that knowledge to love him, as we may the nearest by possessing our souls of true virtue, which being united to the heavenly graces of faith make up the highest perfection."

Locke, the great John Locke, has spoken words of wisdom on this subject. "Virtue," says he, "direct virtue is the hard and valuable part to be aimed at in education, and not a forward pertness, or any little arts of shifting; all other considerations and accomplishments should give way and be postponed to this. Learning must be had indeed, but in the second place as subservient to greater qualities. Seek somebody as your son's tutor, that may know how discreetly to form his manners; place him in hands where you may, as much as possible, secure his innocence. Cherish and nurse up the good and gently correct and weed out any bad inclinations and settle him in good habits. This is the main point, and this being provided for, learning may be had into the bargain."

Books, without number, have been composed for cultivating and improving the understanding, but few, in proportion, for cultivating and improving the affections.

But the best treatises will avail little without living teachers, with a hearty, earnest interest in the promotion of virtue, a sincere delight in noble character, a real passion for moral excellence, for generous, patriotic, honorable action, furnishing in their own persons examples of the precepts they enjoin. With such teachers, and with that best of manuals for teaching morality—the Bible—we may hope to see our youth walking in "wisdom's ways," and growing up as true ornaments and blessings to the community.

STATISTICS. Number of Towns,	- - - - -	158
Number of School Societies,	- - - - -	222
Number of School Districts,	- - - - -	1,636
Number of Children between the ages of 4 and 16 years,	- - - - -	100,829
Average number of Children in each District,	- - - - -	62
Capital of School Fund,	- - - - -	2,049,953.00
Revenue of School Fund for 1855-6,	- - - - -	147,215.00
Dividend per Child over 4 and under 16,	- - - - -	1.30
Capital of Town Deposit Fund,	- - - - -	763,661.53
Revenue appropriated to Schools,	- - - - -	40,000.00
Amount raised by 1 per cent. tax,	- - - - -	78,129.37
Amount raised by Society tax,	- - - - -	13,603.00
Amount of Revenue from Local Funds,	- - - - -	11,327.00
Amount raised by Rate bills,	- - - - -	31,839.00
Amount appropriated for support of Schools, exclusive of School-houses and repairs,	- - - - -	314,113.37
Amount expended for School-houses,	- - - - -	138,267.00
Aggregate amount expended on Common Schools,	- - - - -	452,380.37
Average wages of Male Teachers, including board,	- - - - -	23.75
Average wages of Female Teachers, including board,	- - - - -	17.25

The Reports of Lecturers, and School Visitors, point out the evils and defects in the working of the system, in the indifference of parents, the construction of school-houses, the irregular and non-attendance of children, frequent change of teachers, &c. The Tract, or Letter to Parents, by Mr. Northend, should be sent to the home of every pupil in the land.

To be Continued.

LOUISIANA.

Address of Dr. Samuel Bard, Superintendent of Public Education, before the General Assembly of Louisiana, February 20th, 1856. 13 pages.

In the absence of any late official report, we give a few extracts from the above Address of the Superintendent of Public Education.

More than two millions of dollars had been appropriated by the State in behalf of the system since its organization. Several laws had been enacted, which, making no adequate provision for their enforcement, had failed, in a great measure, to attain the objects hoped for by the friends of the system. These facts are not "hid under a bushel;" they were too glaring for concealment. Within the past year, in thirty parishes, 12,328 children attended school, and 11,191 did not attend. In these parishes there was paid out to teachers \$114,308.84. The yearly apportionment, for the same parishes, was \$142,681.28. The schools numbered 438. He alluded to those thirty parishes only for the purpose of illustration, to exhibit the present operations of the system.

From these figures, said the speaker, it is obvious that there is a lamentable deficiency in the system; for it appears from them that nearly one-half of the educable children in these parishes had not, for that year, derived any advantage from the system. This being the case, he asked, what should be done?

First: give us a practical, common-sense law, plain in its provisions, positive in its requirements; such a law as a distinguished member of the House of Representatives, who is also connected with the Press, has said could be drawn up by three business men in a very short space of time.

Second, let the State Superintendent be placed by the General Assembly in a position that will enable him to render efficient service, as the head of the system, in promoting the educational interests of the people. Let him have work to do; let his energies be awakened; let him not be entrained by the provisos of faulty and inefficient laws; let him have before him the certain prospect of accomplishing something—possibly much—as the result of his labors in the cause of education.

That our efforts in behalf of education may succeed to the fullest extent, he said that we must make provision for the education of our teachers. We should select for that work *home material*—persons who have been reared on Southern soil, who were imbued with Southern sentiments and attachments, who feel a deep concern for the weal and prosperity of the South. We have no objections to competent teachers from the North, who, coming amongst us, identify themselves with us in all our private and public relations, who devote themselves in good faith, and without the bias of sectional feeling, to the work of education. He admired the North in all her physical attributes—"her purling streams, her hills and mountains baptized in beauty." He admired the mighty social and moral energies of her people, which, when directed into the legitimate channels of human progress, lead to a nation's power and glory. But we have a country not less attractive, a climate more balmy, a soil more fertile, a people no less chivalric and brave; above all, it has the distinguishing merit of being our *own*, by birth or adoption, and to it, as such, by every consideration of pride and affection, we owe it our first duty.

If you desire your children to reside in the South, is it not right that you should educate them on Southern soil, and under the influence of Southern institutions? If you wish the South to enjoy that exalted respect to which she is justly entitled, depend upon your own resources and exertions. But here he was met with the objection, we have not teachers, nor the peculiar facilities possessed at the North. Why have we them not? The reasons are as glaring as the noonday's sun. Now the South has one of two things to do—to educate her sons and daughters, or to lose ground from year to year in influence and political power. Would that our people could appreciate the vast necessity of cherishing home institutions in preference to those of a foreign soil!

The speaker dwelt on the importance of establishing one or more Normal Schools, with Model Schools annexed, in order to make teaching a profession, and ridding the State and the schools of instructors who are not qualified by nature or study for the work.

The city of New Orleans has had for several years a system of Public Schools, particularly in the Second Municipality, which will compare favorably with that in operation in any city of the country.

DELAWARE.

Twentieth Annual School Convention of New Castle County, held at Wilmington, Delaware, Sept. 4, 1886. To which is added the Report of Dr. Grimshaw, Superintendent of Common Schools for the County. 16 pages.

In the absence of any State document respecting the Public Schools of Delaware, we make a few extracts from the Report of one of the County Superintendents.

The Superintendent of Common Schools for New Castle County remarks:

SCHOOL HOUSES. Our churches, our clothes, everything but the school-house manifests an age of improvement. The location of a school-house, as has been repeatedly stated, is in almost all cases badly chosen. I can not say carelessly, because in most instances the coldest, bleakest, least protected, noisiest and dustiest spot in the district, is chosen after excited deliberation; always on a public road, generally at the junction of two. The school-house should be placed in a quiet, sheltered, shaded spot. Most of those I have visited are destitute of shade, and in nearly every instance, no fence has been erected. Very few have porches, not one in fifty enjoys the luxury of a small piece of iron, called a scraper, on which to clean shoes, many are entirely too small for the number of children now crowded into them. The arrangement of the desks is, in nearly every school, exceedingly defective. Every pupil should face the teacher, so as to be under the control of his eye. In many schools, I have found the desks placed around the walls, the teacher enjoying a fine view of the backs of his scholars: in some, a very injurious practice prevails of facing the desks, I mean, of making double desks, so that the pupils have every opportunity afforded them of amusing themselves, rather than of studying.

Very few of our school-houses are provided with curtains to the windows, all of them, I believe without exception, have too many windows. No school-room should have windows opposite the pupils faces; none should have windows on all sides.

The ceilings in most of our houses are too low, and our mode of attempting to heat by stoves, is such as to incommode the school without securing warmth.

Only one or two of our school-houses have any adequate provision for ventilation; as far as I have noticed, the only one outside of the City of Wilmington, is in the house located near Center Meeting, in District No. 26.

I can not refrain from speaking of the almost total want of attention to decency, which is manifested in the location of those outbuildings, which a delicate mind endeavors to hide from public gaze, and which no one of correct feelings desires to enter in the broad glare of noon-day, under the gaze of the passing crowd. I have noticed that in some instances, both sexes are obliged to resort to the same building; this, in many cases, so situated that the door opens towards the school-house; or if there are two buildings, I have seen them placed within ten feet of each other, exposed to the gaze of the pupils, or of travelers on the public road, the doors facing each other, and no screen placed between. Can anything be less conducive to morality, decency, virtue and propriety, than this improper exposure of those offices which should be screened in the most secret and guarded manner?

Our school-houses are not provided with those appliances which are absolutely necessary as aids to the teacher. Scarcely a school is provided with any map, except one of our own State. Only one or two own a globe; one or two have cards for the instruction of primary pupils; not one has a numeral frame. Some have blackboards, but many of these are too small, and are hung so high as to be beyond the reach of the pupils; many are not used at all.

TEXT-BOOKS. I find that some pupils are sent to school without any books; they are, consequently, not students but *nuisances*. Others come with just such books as please the fancy, caprice or poverty of their parents. I found in one school, with forty-three names on the roll, the average attendance in which was twenty-seven, five different kinds of reading-books, and seven different sorts of arithmetics.

INDIVIDUAL TEACHING. A great deal of time is wasted by the old fashioned and false method of teaching individuals instead of classes. I notice in my visits to the schools, many pupils sitting idle, sometimes part of the school is asleep, or what is worse, engaged in making a noise, and disturbing the remainder, who may desire to be industrious. This defect arises from the total want of attention on the part of most of those engaged in teaching, to those simple plans, adopted by all good teachers, by means of which all the pupils can be kept employed. Again, much time is lost by using written copies instead of adopting the modern approved

and better mode of teaching writing with printed copper-plate copies. In a large number of the schools, I find many, in some one half of the pupils do not own slates. Any one, with the slightest knowledge of the art of teaching, knows that a slate and pencil are indispensable articles in a school, and that any child of sufficient age to go to school, can be taught spelling and writing and arithmetic, and be employed in drawing simple figures. Instead of this, I find children of eight and nine years of age, who have been attending school for four or five years, who can not write. A child who is permitted to be idle in school, is falling into habits which will stick to him or her through life; the defect will be noticed in the workshop, field and counting-house, in subsequent years. I have not time, on this occasion, to point out all the defects in our modes of teaching, and to show to our people that they do not receive the worth of their money, and that in many of our schools little or nothing is taught, though the children go through the formality of "saying lessons."

WANT OF PUBLIC INTEREST. After visiting about one-half the districts in our county, and these where we have been accustomed to believe there was the most educational spirit, I am compelled to say, that our people are not deeply interested in common schools, and do not care sufficiently about this vital question. I have arrived at this conclusion, after repeated conversations in the districts, and when I note that not one-third of our school voters are ever found at a school meeting or election, when, at the ordinary, unexciting county elections, for officers whose duties are not so intimately connected with the happiness and welfare of every family, at least one-half the voters would exercise the privilege of voting, I am convinced that our people do not appreciate the benefits of good common schools.

TEACHERS. After an experience of two years, as one of the examining committee of the Board of Education in the city of Wilmington, I am compelled to assert that a large proportion of those who presented themselves for examination, were deficient in the elementary branches of an English education, and that, owing to the difficulty experienced in procuring capable instructors, the Board attempted to establish a training school. Some of those who had been teaching for a long time, and some who bore strong testimonials, failed more signally than those of less pretension. I do not pretend to say, that an examination is an infallible method of testing the qualifications of a teacher, but it will at least show whether he or she is qualified in a literary point of view. The person who can read, spell, write, and cipher well, may not make a good teacher, but the individual who can not read, write, or cipher well, *will* not and can not make a good teacher.

Our teachers lack system; the faculty of order is not well developed. Military men study the art of war, and books are published on military discipline or tactics, but teachers seem to suppose that any man or woman who chooses to keep school, is qualified to do so. While our people are to blame for some of the defects; while miserable houses, ill constructed desks and irregular attendance are stumbling blocks in a teacher's path, they are not insuperable obstacles; but, when we find pupils of eight and ten years of age who can not read and write, we must attribute the ignorance to the defects of the teachers. Dentists, Doctors, Farmers and Mechanics, are seeking to improve themselves by associating into societies, and by reading books. But teachers refuse these aids, and ignorantly and superciliously turn away from the proffered assistance.

English Grammar is almost totally neglected, and composition is an art which one should suppose was entirely useless. Every child should be taught how to write a letter at least. I am sorry to say that our teachers often manifest that they are unfit to teach children to speak and write correctly, by the use of ungrammatical expressions in their common conversation.

Some teachers attempt to teach too many branches, and these frequently of a character beyond the capacity or wants of the pupils. I have found French taught to one pupil in one school, and Latin to one in another. This is highly improper. No teacher can or ought to devote so large a portion of his time to one pupil.

I am sorry to say that our teachers do not understand employing and interesting the younger or primary scholars. I have counted as many as twenty little children sitting idle, without book or slate, acquiring bad habits and learning to dislike the confinement of the school-room.

SUPERVISION. The visits of our Commissioners to the schools are so rare, that I may say they exert no supervision over them. They are elected, organize, levy a tax, employ a teacher, and never go near the school.

WANT OF PARENTAL INTEREST. The parents never visit the schools, and feel but little interest in their prosperity, and less sympathy for the teacher. No

school can succeed when the parents encourage and permit their children to be so irregular and tardy in their attendance. It will be noted that frequently one-half the children are retained at home, very often at least one-third. Thus in a school with 56 names on the roll, only 22 were present on the day of my visit. Out of 110 on the roll, the average attendance was reported at 80; nearly one-fourth of the pupils were away. Making due allowance for stormy weather and bad roads, there is no necessity for twenty per cent. of our pupils to be kept away from school. In a district covering a very small territory, and intersected by good roads, and where most of the pupils reside within one mile of the school, one girl only attended ten and a half days in a month; one do. do., sixteen and a half do. do.; one do. do., twenty-five do. do.; one do. do., one half do. do. One boy only attended eight days in a month; one do. do., fourteen do. do.; one do. do., five do. do.; one do. do., nine do. do.; one do. do., six do. do.

Allowing twenty-five days to a month, one girl made a full month's time; nine pupils made ninety-four days and a half, instead of two hundred and twenty-five days. What farm or factory would succeed with work so irregular as that, and how would the pay-roll of these pupils look, if they were working in factories, and lost one-half and four-fifths of their time?

The pamphlet from which the above extracts are taken, contains Remarks by the President of the Convention, Hon. Willard Hall, to whose untiring exertions, the City of Wilmington and State of Delaware owe a debt of gratitude for such public schools as they have.

REQUISITES FOR A GOOD PUBLIC SCHOOL. The first requisite of a good school, is a good, commodious school-house, in a pleasant situation, properly furnished. If the people of a district would come together in their school meeting, and take an interest in their school, they would not rest without such a school-house; they would not consent to be disgraced by a mean, shabby house, for the highest object for which they live—to train their children to live after them; but they would regard their own credit and the welfare of the children of their district, and have a building showing that they can appreciate the important trust committed to them by our school laws, to provide a school for the education of these children.

The school-house should be an ornament of the district, in a pleasant spot, inviting to the children, grateful to the recollections of their after years.

A well qualified teacher is indispensable to a good school. Difficulty of procuring well qualified teachers, is a general complaint. This difficulty arises from the same source, to which we trace every other hinderance of good schools—neglect. If the people of any district are in earnest to have a good school, and if they will attend the school-meeting and take proper measures to have one, they will easily surmount the difficulty of procuring a suitable teacher.

Upon this point we may add, that a Teacher's Association in each county would be a powerful means to change the character of teachers, elevate their standing, and enhance their compensation; and there is no worse sign with respect to teachers than their backwardness to form such an association.

It is believed that the surest means to remedy the evils under which our public schools are depressed, would be a paper well conducted, and circulating in our school districts. A number of copies sent to every school-house, and thence throughout the district, would be a very effectual means of education, would enlighten the common mind upon the most vital of its concerns, that of education, while by diffusing general knowledge, and producing a taste for reading and a spirit of research, it would be an invaluable benefit to parents as well as to children.

These suggestions indicate the need of a State Superintendent, for a few years at least, to rouse the public mind to these most important considerations. All that is requisite in order to our having one of the best systems of public schools in the Union, is for the people to take the subject in hand with earnestness. The public schools are their schools, they belong to the numbers, and upon them the numbers must depend for all the benefits of education. Now will the numbers abandon their own interests, and suffer a state of things consigning them to the most copious source of all evil to men, communities as well as individuals, the incompetency and waywardness of neglected education? This question is worthy of the best consideration; it should be deliberately examined.

FLORIDA.

We have not received any official report respecting the Public Schools of Florida.

GEORGIA.

In the absence of any official report respecting the condition and improvement of the elementary schools of Georgia, we introduce extracts from a "*Speech of Mr. Stiles, of Chatham, on the Subject of Common School Education, delivered on the 29th of January, 1856.*" Published under resolution of the House." This speech was made by Hon. William H. Stiles, Speaker of the House of Representatives, in the midst of a stormy debate on a "Bill for establishing a System of Common Schools," reported by a Committee—for the purpose of introducing a substitute of three or four sections, authorizing the Governor to appoint a Commissioner of Public Schools, "to visit the various counties of the State, to prepare one or more plans of organization suitable to the whole, or to certain districts of the State, to diffuse by public addresses a knowledge of existing defects and desirable improvements, and report on the expediency of establishing one or more thoroughly organized Normal Schools"—as the corner stone of a new system afterwards to be more fully discussed and matured.

The Speaker discusses with great ability the following propositions:

1. It is the duty of every government to provide for the education of the people.
2. But if it is the duty and interest of every government to provide for the education of the people, more especially is it the duty, the interest, and even the indispensable necessity of a free government, to educate the people.

3. What are the difficulties in the way of those duties and interests?

These may be briefly enumerated under two heads:

1st. We need in Georgia more education.

2d. We need better education.

1st. That we have need of more education in Georgia, is a proposition no one will be disposed to dispute. If any doubt existed on that point, it would be immediately dispelled by reference to the last census of the United States, taken in 1850, which exhibits the appalling fact, that we have within the limits of our State upwards of forty thousand human beings over twenty years of age, who can neither read nor write. This evil not only exists, but what renders it still more alarming, is the fact that it is increasing upon us with fearful rapidity. By the previous census of 1840, the number of persons who could neither read nor write, is estimated at 30,000, so that in ten years, there has been an increase of more than one-fourth, in that unfortunate class.

And there are other facts which that census discloses, equally distressing to the patriotic heart of every true Georgian.

We have in this State, under twenty years of age, - - - - -	212,226
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If we deduct those under five years, as incapable of going to school, - - - - -	56,054
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It leaves a balance needing instruction, of - - - - -	156,172
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If we add to these the number of those over twenty years, who cannot read or write, - - - - -	41,667
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It makes the number to be taught, - - - - -	197,839
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Deduct from that those going to school, viz., - - - - -	77,016
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It leaves destitute of all instruction, - - - - -	120,824
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Again, the number of teachers in Georgia, as the census shows, is only 1,265, which, at the rate usually allowed of fifty scholars to the teacher, (to speak in round numbers,) would be sufficient only to instruct 63,000 scholars; whereas the number of teachers required for those needing instruction in Georgia, viz:

197,000, is - - - - -	3,956
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Deduct from the number required, the number we now have, - - - - -	1,265
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And it leaves us in want of (teachers,) - - - - -	2,691
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But to exhibit in its true light the want under which we labor, it is only necessary to refer to the advantages of education enjoyed at this day by almost all of the civilized nations of the world.

The speaker then passes in rapid review the history and condition of popular

education in the principal states of Europe, from which he adduces the following "secrets of their success in education."

1. Education enters into and constitutes an important part in the administration of government. In each country there is a Minister of Public Instruction, who constitutes a part of the ministry or cabinet, the same as the Minister of War or Finance, and who controls the whole subject of education throughout the Empire.

2. It is gratuitous; in most of the countries, the expense of tuition is borne by the government, and in others the fees are very small, and exacted not so much with a view to support the system, as to "enforce a lesson of domestic piety, establish parental authority, and vindicate personal freedom."

3. It is compulsory; and everywhere the attendance on schools is enforced, either through the police or some school authority.

So much for the condition of education in the various countries of Europe, in which it is evident that the least advanced, although possessing school systems inferior to those of Germany, Switzerland or Holland, are yet vastly superior to anything which we can boast of in this "Empire State of the South."

After glancing at the condition of public schools in the United States, the speaker exclaims:

And what is the result of that system? Why the six New England States stand in point of intelligence the first on the list of States of the Union, and New Jersey and New York next, while the "Empire State of the South," stands the twenty-third State, having in the whole galaxy of this Union, at the time that census was taken, but four States that she could look down upon. After this exhibit of our state when compared not only with the countries of Europe, but the States of the Union, we can find no difficulty in arriving at the conclusion that we need in Georgia *more* education.

2d. We have need in Georgia of *better* education.

The only means by which we can expect to have better education, is, by the improvement of the teachers. If, then, the first step towards reform in our system of popular education, be the scientific preparation of teachers for the free schools, the next inquiry is, how can we soonest and most perfectly achieve an object so desirable? The ready and obvious answer is, establish an institution for the very purpose. Establish an institution to afford that instruction which neither the common school, the academy or the college can furnish, viz., a knowledge of the theory and practice of education.

After discussing, in a brief and masterly manner, the necessary qualifications of such teachers as Georgia should train for her own public schools, and the history of professional institutions for training teachers, the speaker comes to his last point.

4. How are these difficulties to be overcome?

The first steps or initiation towards overcoming these difficulties is, in my humble judgment, the passage of the substitute now upon your table. The first section of that bill provides for the appointment of a commissioner of public schools. This is the preliminary and indispensable step to the establishment of any system of common schools. All experience, both in Europe and America, on the subject of education, attests this fact.

A system without a commissioner, would be an awkward and unwieldy body without a head, which could not be moved, or if capable of moving at all, would be like a ship at sea under full sail, and without a helmsman; it would move on only to destruction. In framing this substitute, experience, and experience alone, has been my guide.

In all the countries of Europe, as I have already shown, there is a head to the system, and that head is found in the respective Ministers of Public Instruction. In this country, every State which has adopted a system of public schools, has at its head either a commissioner or some other officer, with the same powers and duties, under another name. It is an insuperable objection to all the plans or school systems presented for the consideration of this body, that this head or chief officer is omitted, and the system is left to be worked or not worked at all by county officers, unqualified and unpaid. And without a commissioner of public schools for the State, who is to decide where any man is aggrieved in consequence of any acts or decisions of any school committee, district meeting, trustees, county inspectors, or in any other matter arising under the school law? Who is to see that there is uniformity in the system; that the general standard of education shall be alike in similar districts throughout the State; who is to have a knowledge of these facts, and to report the same with whatever progress has been made, as well as

such defects in the system as experience shall demonstrate as necessary, and which may require, from time to time, legislative action? And if they of the North required years to perfect their systems of education, where they are free from the two most serious and almost insurmountable difficulties under which we labor, viz., the sparsity of population and inequalities in property, how can we expect to fall at once upon a thorough and efficient system? All things show not only the indispensable necessity of such an officer, as the system could not work without a head, but that he should be one of the first minds of the State, to adjust the differences and decide the grievances so far as he possessed the power, or where the laws provided no remedies for existing evils, to be able to suggest for the action of the legislature, such other and farther provisions as would most effectually meet the difficulties.

The salary of this officer is placed by the bill on an equality with any other official of the State, in order to command the best talent of the country. To a thorough knowledge of the existing systems of instruction in every part of the world, and the theory and practice of teaching, the commissioner should combine, in no ordinary degree, legislative, executive and judicial talent. He should be a man of eloquence, as well as a man of business, who might, as occasions demanded, rise in speech to a just appreciation of the vast interests of this subject, or descend, when necessity required, to the minutest details of business in all its branches.

Let us by the passage of this bill, make a commencement to a system of Common Schools for Georgia. Let us on this day lay the corner stone of an edifice, which, when completed, will be the honor and pride of the South. In the name and in behalf of the 150,000 Georgians, between five and twenty years, who are growing up in ignorance of the duties and relations of civilized life, I demand it. In the name and in behalf of the 42,000 of my countrymen, over the age of twenty years, who are daily hurrying to the grave, without being able to read for themselves even the "way of eternal life," I demand it. Finally, in the name and in behalf of my native State, which we proudly call "the Empire State of the South," I demand it. And in what, pray, does her Empire consist? In lands and tenements, in fields and stocks, in railroads and copper mines, but not in that which in value far exceeds them all, the results of cultivated intellect. It is an Empire of matter, not of mind, of darkness, not of light. Enlighten it—efface from her escutcheon that foul blot which the census discloses, or never call her again the "Empire State of the South."

ILLINOIS.

Report of the State Superintendent of Common Schools [Ninian W. Edwards] to the General Assembly of the State of Illinois, Dec. 10, 1854. 56 pages.

The principal portion of this document is devoted to an "*Act to establish and maintain a System of Free Schools*," which the Superintendent was instructed by the Legislature to draft. We glean a few statistics respecting the means of supporting the schools.

STATISTICS.	Amount of School, College and Seminary Funds,	\$2,953,594
Interest of do.,	- - - - -	196,281
Sum raised by tax in 97 counties,	- - - - -	42,705
Amount of money paid for Teacher's wages in 79 counties,	- - - - -	308,385
Number of organized School Districts reported	- - - - -	4,125
Number of White Children under 21 years,	" - - - - -	407,238
Number of " " at school,	" - - - - -	136,371
Number of Schools,	- - - - -	4,215
Average monthly compensation of teachers—male,	- - - - -	\$35
" " " female,	- - - - -	\$12
Length of School Term in 1854. in months,	- - - - -	6

SCHOOL LAW. The new School Law reported by the Superintendent, and adopted substantially as reported, by the Legislature, provides,

1. For the election by the people of the State Superintendent with very large powers.
2. The support of the schools established under the act out of the avails of funds set apart for that purpose, and a tax on the property of the State and of several townships.
3. For holding School Conventions and Teachers' Institutes

INDIANA.

Fourth Annual Report of the Superintendent of Public Instruction [Caleb Mills] for the State of Indiana. February 11, 1886. 126 pages.

This document embraces besides the report of the Superintendent, an Abstract of Township reports; Summary of the same by Counties; Exhibit of the Colleges; Circulars of Superintendent to township officers; Answers to Questions on the School Law; Exhibit as to the cost of the Township Libraries; Catalogues of Books purchased for Libraries; Premiums offered for School structures, &c. We shall make our extracts with a view of bringing out some of the peculiar features of the new school law, established in 1851, and modified in 1854.

PROGRESS OF THE SYSTEM. Though the cause of popular education in Indiana may be in a transition state, yet it is rapidly evolving into order, symmetry and efficiency. Its various strata are gradually assuming their proper position, and the due relations of a well defined system. The primitive elements may indeed bear traces of the throes of ignorance and the upheavings of selfishness in an ante-constitutional period, but the genial influences of the light and heat of Christian patriotism, are rapidly clothing even these volcanic scoria with a soil that promises, at no distant day, a rich and abundant harvest.

During a tour through ten counties, I had the pleasure of a two hours' conference with township trustees and other friends of education in the several counties. The zeal and interest manifested by many of the township boards, indicated a proper appreciation of the cause, of which they were the official representatives. A ride from five to twelve, fifteen, and eighteen miles, in order to be present at the aforesaid conference, the questions asked, and the information communicated by more or less of these trustees, show that the educational interests of some of the townships are in good hands. The aforesaid interviews furnished opportunities, not only for personal interview and acquaintance, but also for the acquisition of much minute and valuable information relative to the real workings of the system, and the estimation in which it is held by the masses. When the weather permitted, a majority of the townships in most of the counties were represented at these conferences by one or more of the members of their respective boards. Four of the five townships of one county were represented by eight members of their boards, who traveled eight, ten, twelve, and eighteen miles. Two lectures were delivered in each of the said counties except one. This omission was occasioned by the necessity of accomplishing one of the three stages of travel to the next county, after the delivery of the one o'clock address. Though such an exploration of each and all the counties in the State, which I contemplate accomplishing before the close of my official term, will disclose much to dishearten, it will also bring to light much to cheer, stimulate and assure us of the ultimate triumph of the cause. The people of Indiana are in earnest about their schools, and will do all that is necessary, when satisfied of that necessity. Facts, figures, and information will not be lost on the public mind. The influence of former efforts in this direction is manifest, and is daily becoming more and more apparent. Some counties are more wide awake than others. Some townships exhibit no dubious signs of progress. They are actually in the field at work in some corporations, while in others there may be only tokens that the preliminaries of the day's toil are under discussion, and occasionally not even the chimney betrays any signs of awakened intelligence within. There are all grades of interest felt in the cause of popular education, and manifested by the appropriate symbols, from the unheaven log house to the three story high-school edifice. The unheaven log and the un-thinked wall is one type of progress, even though it be somewhat primitive and rude, yet it is real, and not unfrequently does its rudeness betoken the rapid approach of a more worthy and significant substitute, and even this, in due time, will give place to a higher style of architecture.

EQUALITY OF SCHOOL PRIVILEGES IN THE SAME TOWNSHIPS. On the former principles of distribution, the blessings of the public funds have been dispensed to their recipients in the several districts, in proportion to their numbers, without any modifying circumstances, which becomes in fact, a practical exclusion, to a greater or less extent of the people of sparsely settled districts, from an equitable participation in a common educational patrimony. The correction of this evil has long been an object of earnest desire, but had been hitherto unreached. The incorporation of it in our revised code, may be justly regarded as an evidence of progress, as well as an act of impartial justice. Does the State undertake to furnish tuition for all her youth? Let not the amount of that instruction depend on

the mere circumstance of numbers congregated in a given school-house, or the children enumerated within certain geographical limits, denominated districts. The great cardinal principle that underlies and indeed characterizes our educational system, demands that a school of thirty pupils should be taught as long a period, and in as thorough a manner, as one containing sixty scholars. The interest of the township require it, the claims of justice imperiously call for it, and the plighted faith of the State demands it.

NEW SCHOOL-HOUSES. The liberal exercise of the power by township trustees [to assess the necessary tax for the erection of school-houses, and furniture under certain restrictions,] within the last nine months, indicates the estimation in which it is held. The unique provision for meeting emergencies in this department, by authorizing the reception of donations, that shall be reimbursed to the generous and public-spirited donors, in the form of exemption from future taxes for like purposes to the full amount of said contributions, has proved a very popular and acceptable device. It has enabled township trustees to undertake the erection of all the school structures needed in the corporation without delay, affording the liberal citizens the opportunity and satisfaction of doing a generous and praiseworthy deed, and giving the more penurious the blessed assurance that they shall not be ultimately overlooked, nor be deprived of the pleasure of a due participation in this good work. This peculiar feature is not merely prospective, but in a modified form, is also retrospective in its operation. It has aided in divers instances, to cultivate a generous and liberal spirit, both directly and indirectly, and will doubtless prove a no unimportant educator of both youth and age. One of the most pleasing signs of the times and marks of progress, is the amount levied for this purpose in no less than four hundred and thirteen townships. The aggregate assessment for this sole and exclusive purpose in sixty-eight counties, is \$314,272.63, a sum indicative of a somewhat primitive condition in reference to school structures, and also highly significant of the real temper and feelings of our people relative to their educational interests.

CLASSIFICATION OF TAX-PAYERS. It is worthy of notice that the classified exhibit of tax-payers in seven hundred and forty-eight townships and seventy-three counties, shows that almost five-ninths pay on \$500 and less, and more than two-thirds pay on \$1,000 and less. This expose discloses the interesting and significant fact, that even a three mill tax would impose on almost five-ninths of the tax-payers of Indiana, the burden of an assessment varying from one cent to one dollar and fifty cents, and nearly two-ninths would pay only from a dollar and a half to three dollars. Thus it is evident that the masses would not be oppressed by such a tax, when the duplicate shows, that a levy of three mills on a dollar for school purposes on the property of more than two-thirds of said tax-payers, would vary from one cent to three dollars. In forty-six counties there are reported to be thirty thousand and ninety-seven non-residents, whose aggregate property scattered over the State, is safely reckoned by millions, who would, on such a specific assessment, be required to contribute to the moral and intellectual elevation and improvement of the rising generation of the commonwealth, within whose limits their landed estates are located. Many of them would regard such a tax as a good investment, and consider its expenditure as really enhancing the value of their lands tenfold the amount of the assessment. This remark is not the result of mere random conjecture, but is based on the known and expressed views of at least some of the more wealthy of these tax-payers. If others of them entertain less generous and intelligent sentiments, their speedy conversion would be no detriment to themselves or the commonwealth.

CARDINAL PRINCIPLES OF THE SYSTEM. Its cardinal principles, State provision of tuition, and township oversight and control of the schools, and the erection of school structures, meet with a cordial approval, and promise to realize all reasonable expectations.

A FREE SCHOOL FOR SIX MONTHS. It requires no special logic to prove that a six months' free school is cheaper than a three months' term. A six months' school we must have, for nothing less will satisfy the masses. If only three months of this period be free, the balance must be at the expense of the parents of the pupils. We have shown from data that can not be questioned, that more than one-half of the tax-payers of this commonwealth, pay on \$500 and less, and more than two-thirds pay on \$1,000 and less. Thus it appears that an additional three months' free school, would cost the aforesaid one-half of our citizens, from one cent to one dollar, and that none of the above two-thirds would have to pay more than two dollars. This would be the expense of the supplementary three months' free school to the above-named portion of tax-payers. But who of all the said one-half could get a child taught three months for his school assessment of one

dollar, or any fraction of this monetary unit? A majority of the above-described two-thirds, would be subjected to the expense of from five to fifteen dollars to maintain, in a three months' subscription school, the same children that had attended the free school a like period. Either the parents' pockets or the children's intellectual culture must suffer by the failure to provide means for a six months' free school, in the rural portions of the commonwealth.

QUALIFICATIONS REQUIRED IN TOWNSHIP TRUSTEES. The conviction ought to be both deep and universal in every township in the commonwealth, that the township trustees should be selected with primary reference to their fitness and capacity to take charge of and properly manage the educational affairs of the corporation. The other interests committed to their charge are altogether subordinate, and secondary in importance. They should be men of large experience, practical wisdom, liberal views and unquestioned firmness. All these qualifications will find ample verge and scope in the discharge of their official duties. The location of the sites for the school-houses, the erection of these structures of due dimensions, convenient plan, tasteful finish and appropriate furniture, and the employment of competent teachers, demand the best talent in the township. The interests of the corporation must control the selection of the sites; the comfort and progress of the pupils must dictate the character of the structures and the qualifications of the teachers. What else than rich experience, practical wisdom, generous sympathies, and unflinching firmness, will be competent to meet such responsibilities and discharge such duties? Emergencies will arise that require prompt action, demand a clear and satisfactory reason for the course adopted, and call for a mild but firm resistance to demands of ignorance and the clamors of selfishness. Trustees must be men of nerve to resist the one, and of intelligence to answer the other.

TEACHERS' INSTITUTES. The first organized effort made to elevate and improve the qualifications of teachers, in the older States, was teachers' associations, partaking more or less, in different localities, of the character of teachers' institutes. This waking up of *d'esprit de corps* attracted legislative attention, and led to public provision for their aid and encouragement. This aid and comfort gave them new life, reputation, and efficiency, which rendered their mission more stable and useful. The nature of their operation and the character of their results, indicate their true sphere, and proclaim them harbingers of good rather than the real substantial blessing sought. As there must be a dawn before the full orb of luminary appears, so the teachers' institute has always heralded the normal school.

The brief existence and temporary results of institutes hitherto held in our State, furnish unmistakable evidence that the time has come when legislative provision should be made to give them power and permanence. Let a competent and experienced corps of instructors go into thirty counties of the State, and hold an institute for two weeks in each of them, with a due accompaniment of popular lectures, and it would accomplish tenfold more good than the same expense could possibly effect in any other way. We may as well expect the sun to rise unhindered by the dawn, as to think that normal schools will come into being and flourish without this preliminary instrumentality.

SMALL AND LARGE DISTRICTS CONTRASTED. The early experience of other States warns us against the multiplicity of small districts, while their more recent policy and practice impel to an imitation of their present example. The superior wisdom and economy of the large over the small districts, become apparent on a fair exhibit and impartial comparison of their legitimate results. A township of thirty-six square miles, may be divided into districts of two miles square, as many of them really are. Thus carved, it presents nine of these little cosey, *quasi* corporations, with a corresponding number of children, often so small as to forbid the establishment of a school, or if established, so insignificant as to be little the enterprise, and leave an unfavorable impression of its real character and consequence on the public mind. These nine schools, enfeebled by their numerical poverty, languish, droop, and become so attenuated, that it is difficult to ascertain whether there is any literary life and activity in either teachers or taught.

A more legitimate conclusion from given premises, was never reached, than that small districts ensure small and ill furnished structures, short terms, incompetent teachers and corresponding instruction, lifeless schools and unawakened intellects, general apathy and partial disgust at the whole system. This result has been realized, demonstrated, stereotyped and widely circulated in the older commonwealths, known and read of all men. This is a truthful picture of one side of the medal, now let us look at the obverse.

The aforesaid township may also be divided into districts three miles square. Thus arranged, it presents four districts of sufficient amplitude to authorize the

erection of more spacious and convenient houses, the employment of more competent instructors, and justify the expectation of sufficient amount of raw material to tax the skill, rouse the energy, and encourage the best efforts of the literary manufacturer. This territorial division would subject but very few of the pupils to the necessity of going more than a mile and a half from the parental roof. The exercise incident to that amount of daily travel, would be an important item in their physical education, and so far from being detrimental to their literary progress, it would rather promote it, by creating a more lively sympathy between the intellectual and physical natures, and calling into more vigorous and lively action their respective powers. We have already too many of these hot house plants. Let us give our children and youth a little more physical power and energy, by subjecting them to a more hardy discipline. A walk of a mile, or mile and a half, every morning, inhaling the pure, life-energizing air of heaven, would not only rouse their cheeks and call the whole muscular system into healthy exercise, but it would impart corresponding activity to the mental powers. Such daily excursions could not fail to cultivate a familiarity with the scenes of the outer world, and awaken a sympathy with the beauties of the material universe and its Great and Glorious Author. Under such a nurture, our sons and daughters would be something else than mere shadows. There would be physical development that would give them, at least, a pre-emption title to the name of men and women, when they reached maturity.

The youth of a township trained under the discipline of such a policy, would possess a character for intelligence, enterprise, and a hearty sympathy with true genuine progress, that would not fail to proclaim their fathers' wisdom, economy, foresight and enterprise. Under such an occasional administration, the schools would be worthy of the name, teaching merit the appellation of a profession, the houses be less dubious indices of the purpose of their erection, the value of knowledge more highly appreciated, and the import of mental discipline more clearly comprehended. The economy of such a policy is too obvious to require any financial exhibit, and the wisdom too manifest to need any explanation. Its introduction would be a marked era in the history of popular education, and its universal adoption would be nothing else than the veritable golden age of intellectual culture, benevolent impulse and philanthropic enterprise.

TOWNSHIP LIBRARIES. The operation of the library feature of the system, [the appropriation of the mills (\$186,327) of a one-quarter of a mill property, and a twenty-five cents poll tax for two years to the establishment in each township of a library, amounting in the aggregate to 228,213 volumes,] as far as heard from, has been exceedingly happy, disappointing the predictions of its enemies, and the fears of its timid friends, and even transcending the most sanguine expectations of its more ardent advocates. The interest awakened by its use, and the estimation in which it is held by adults, as well as youth, confirm the wisdom that gave it a township character rather than a district mission.

The parent should not look in vain to the township library for instruction, adapted to his wants and suited to his tastes and necessities. The teacher should find in its treasured stores the ablest works in his department of labor, embodying the general results and experience of the best minds, whose energies have been concentrated in the educational work. It should furnish entertainment for the hours of relaxation, instruction for the thoughtful and reflecting moments, amusement for the wearied mind, and nourishment for the roused and inquisitive intellect. The man of scientific tastes and pursuits, should be assured of finding on its shelves something kindred with his mental aspirations. The artisan should be lured to consult and ponder its pages, in confidence that he will not go away unblest, and that familiarity with its treasures can not fail to kindle the ardor of his pursuit and fire the fervor of his zeal. Men of all professions and employments, of varied tastes and tempers, likes and dislikes, should feel it to be a common center of attraction, a general fountain of knowledge, and a common bond of universal brotherhood. A library of such antecedents and concomitants, can not prove else than an effective and permanent condutor in any system of popular education. There are many pleasing tokens that it has entered on a glorious mission, and the indications of the high estimation in which it is held, and the usefulness it is accomplishing, are neither few nor insignificant. The short time that has elapsed since the books were apportioned to the townships, opened and put in circulation among the people, forbids any general collection of library statistics. It may not be amiss in this connection, to present a specimen of what has been received, relative to its operation in various parts of the State. One township reports 1,230 volumes taken out in three and a half months; another 687 in four months; another 1,242 in nine months; another 1,050 in six months; another 700 in nine months; another 1,640 in ten months; another 2,127 in eight and a half months. No two of the said townships are in the same county, and none of these libraries contained more than 330 volumes.

Such expressions as the following, will not be lost on the public mind: "Nearly all the books have been drawn out as much as twenty-five times, many of them oftener, and quite a number of the books are not permitted to remain in the library an hour before they are withdrawn." Says another: "Our library is doing more good than anything that has ever been done by the Legislature of this State. Great interest is manifested in it here."

SCHOOL JOURNAL. The State Teachers' Association, at their annual meeting in December, resolved to undertake the publication of a Monthly Journal, and made the necessary arrangements for the issue of said serial the current month.

COLLEGES AND COMMON SCHOOLS. The Superintendent has had the pleasure of attending the commencement exercises of four of our five colleges. Though these institutions are the products of private associated enterprise, over which the State is entitled to no oversight or control, except of one, yet the head of this department has had too long experience of college labors, and cherishes too deep and lively sympathy with those in charge of these institutions, to entertain for a moment the most distant suspicion that such visits would be any less agreeable to their respective Faculties than to himself. These faculties cherish a much more cordial interest in the advancement of popular education, and have a much more direct and effective agency in its real progress, than the superficial observer supposes, or is disposed to acknowledge. Its history in Indiana would put such sapient souls to the blush, were the curtain withdrawn, that hides from public gaze the labors of these instructors in the recitation room and in the study, through the pulpit and the newspaper columns. The baccalaureate addresses of their five Presidents for the last twenty years, delivered before popular assemblies, have accomplished more to rouse the public mind and give a right direction in reference to its educational interests, than the combined efforts of all the ignorant, prejudiced, self-conceited college croukers since the flood. These Presidents and their associates have done more through the press and popular lectures, though they may seem to the one idea man to be few and far between, than they will ever get the credit for from the casual observer. Their own labors in "keeping college," have too much of a family likeness with the school-master's vocation, to permit them to be unsympathising spectators of his toils and degradation. It is gratifying to perceive the gradual diminution of the popular prejudice against colleges, so industriously fostered by some having no experimental knowledge of their benefit, and by others, who, having enjoyed the opportunity of a thorough training, give incontestable evidence of the indolence and negligence of their own college life, and betray a want of either the capacity to appreciate, or the honesty to acknowledge their obligations to those whose mistaken kindness tolerated the graduation of such learned dullness.

Liberal in their spirit, generous in their aspirations, and enlarged in their views of education, they constitute a fraternity that will prove both an ornament and a blessing to the commonwealth. The sympathies of our people cluster around them, and they have grown up to their present maturity and usefulness under the hardy discipline of indigence, and been blessed with no small share of its trials and embarrassments. Their pioneer life and triumph is an ample guaranty of their future mission. The thousands of teachers that have already gone forth from them, are but pledges of the thousands still to follow. Colleges, academies and schools are but parts of a great national system of popular education. Numerically considered, the common schools may be regarded as the base of the pyramid, the academies and colleges the symmetrical and graceful superstructure, whose summit reflects the dawning rays of science through many a retired valley and sequestered nook, and around whose top have ever lingered the twilight beams of the departing day of popular illumination. Historically and logically considered, the apex is the true base, however paradoxical it may seem. Colleges give rise to academies, and these in turn nourish and foster schools. Both in our own and European countries, the establishment of colleges *preceded* the introduction of any system of common schools. The past and present of all these nations confirms the truth and soundness of our remark. The date of the foundation of many of their venerable Universities *antedates*, by centuries, the maturity of any wise provision for the training of the masses. Four of our six colleges sprang into being in the *second* decade of our existence as a commonwealth. What was there in being, at that period, deserving even the name, much less possessing the character of a wise and efficient system of common schools in Indiana? Let the true sequence of causes be understood and there will be no difficulty in adjusting their relative claims to public regard, and their true position in the series. The exaltation of neither can be permanently promoted by an undue depreciation of the other. Colleges and common schools, one in their mission, indivisible in their results, now and forever, should be our motto.

ACADEMIES AND FEMALE SEMINARIES. Many of them will doubtless be absorbed by the silent operation of our system, as it evolves the several parts of an efficient graded school. Others will maintain their identity and independence, and accomplish their appropriate mission.

PREMIUMS FOR THE BEST SCHOOL-HOUSES. It is both an interesting and significant fact, that the State Board of Agriculture have kindly entertained the suggestion, to offer a premium for the best high school edifice, another for the best furniture and apparatus, a third for the most tasteful and convenient rural school house, and a fourth for corresponding furniture, fixtures and enclosure. The following list has been adopted:

For the best high school building, complete and ready for occupancy, including external finish and internal arrangement, embracing, also, enclosure, facilities for ventilation, completeness and economy of heating the same, a copy of Colton's *Atlas of the World in 2 vols. folio*, valued at \$27.00, will be given as a premium.

Competitors for this premium must submit a perspective view of their building, plat and inclosures, accompanied with ground plans of the several floors, with a section exhibiting the ventilation and heating arrangements, together with the external dimensions of the edifice, its several stories and apartments.

For the best rural school-house, complete and ready for occupancy, including external finish and internal arrangements, embracing also, a lot containing not less than half an acre of land, the enclosure of the same with appropriate out buildings, facilities for ventilation, completeness and economy of heating the same, a pair of Globes, valued at \$25.00, will be given as a premium.

Competitors for this premium must submit a perspective view of their building, lot and enclosure, accompanied with ground plans of its school floors, with a section exhibiting the ventilation and heating apparatus, together with the external dimensions of the edifice, its several stories and apartments.

For the best high school furniture and apparatus, including desks and chairs for teachers and pupils, blackboards, maps, globes, and other geographical, astronomical and philosophical apparatus, in value not less than \$100, a copy of Smith's *Dictionary of Greek and Roman Biography and Mythology in 3 vols. 8 vo.*, valued at \$15.00, will be given as a premium.

For the best rural district school furniture and apparatus, chairs and desks for teachers and pupils, blackboards, maps and other geographical and astronomical apparatus, in value not less than \$50.00, a copy of Webster's *Quarto Dictionary and Lippincott's Gazetteer*, valued at \$10.00, will be given.

Competitors for the aforesaid premiums must furnish the committee of award a perspective view of their respective school rooms, exhibiting said furniture and apparatus, as far as practicable.

The appropriateness and practical value of these premiums will be readily seen. If good taste, neatness and convenience in farm houses, barns and other appurtenances of the farm, are legitimate objects of encouragement for the State to foster, surely school architecture, furniture and enclosures may claim a modicum of her maternal regard with equally promising hopes of happy results. Such an enlightened policy and liberal views will be appreciated, and the continuance of them for the next ten years will secure memorials of their wisdom, even more durable than silver pitchers, and more extensively known and valued by the masses than the most exquisite production of the graver's art. Under the stimulus of such inducements, the prompting zeal of an intelligent appreciation of their intrinsic worth, and the guidance and suggestive power of superior specimens of school architecture, we may hope to see structures rise, both in our towns and cities, and also in the rural districts, that will indicate to the passing stranger the good taste and public spirit of the parents, and prove a rich source of instruction and comfort to the pupils and of joy and rejoicing to the teachers.

THE BIBLE A TEXT BOOK. In science there will necessarily be progress, and consequently a change of text books will occasionally be demanded. But the text book in morals is the production of an Author, whose wisdom needs no revision, whose knowledge is susceptible of no increase, and whose benevolence admits of no question. The Bible, without note or comment, is installed in the schools of Indiana, and its continuance as the moral standard in these nurseries of her future citizens, will as surely mark the period of her prosperity and grace the zenith of her glory, as its exclusion would prove the precursor of her decline, the herald of her shame.

SWAMP LANDS. The school system was made the residuary legatee of the swamp land estate. Present appearances indicate that the heir of this noble bequest will find among its assets, after the debts of the estate are paid, little else than the good will of the testator and the kind wishes of his executors. Though the swamp land fund it is believed, will be completely exhausted in rendering

these lands fit for agricultural purposes, yet its conversion into material ditches will not be without a favorable connection with the educational interests of the State. Thousands of acres will thus be redeemed from the dominion of frogs and fever miasma and converted into fields loaded with the rich fruits of the earth, or clothed with flocks and herds more numerous than ever graced the enclosures of the man of Uz. The revenue ultimately arising from the agricultural improvements of these lands, will doubtless prove more extensively and permanently useful to the cause of popular education, than the entire proceeds of their sale would have effected had they all been added to the school fund. Though this fund of magnificent dimensions has been literally *drained*, yet its under-drains will impart increased fertility to the educational manor, whose proceeds will be an ample equivalent for all disappointed hopes in that direction.

SCHOOL FUND AND RESOURCES. The property of the State, pledged by the constitution to the cause of popular education, may be regarded as the most reliable funds for the support of our schools. The Legislature have appropriated the avails of a one mill tax on said property for this purpose, and have also made a levy on the polls, for the same object, to the amount of fifty cents on each, to remind the owners of such personal estate that its security and value would not be diminished by the diffusion of knowledge; and therefore it might properly be taxed for its own protection and the general good. One collateral result of the aforesaid assessment will be the tendency of it to awaken in the minds of such property holders a more deep and decided sympathy and interest in the success of a system pledged to the training of the masses and the general diffusion of knowledge.

The financial exhibit of educational funds will be as follows:

Real and personal estate assessed in 1855,	\$302,310,839.00
Number of polls in 1855,	178,877
School assessment on the above amount,	\$302,310.83
School assessment on the polls,	89,488.50
Gross amount from the above sources,	\$391,749.33
Aggregate of the school funds as reported last year, but not included in the above amount,	\$2,559,808.12
This fund is loaned at 7 per cent., and the officers' fees for receipt and disbursement are 5 per cent. of the interest, which is about one-third of 1 per cent. of the interest on the amount loaned, and therefore the net interest on the school fund, at six and two-thirds per cent., will be	\$170,620.54
Amount of the above income,	\$562,369.67
From this deduct delinquencies at the rate of school tax delinquencies of 1858-4, and fees and traveling expenses, at 16 two-thirds per cent.,	93,728.31
Net amount from the above sources,	\$468,641.56
Amount of the unexpended balance of school funds in the treasury, Oct. 31, 1855,	32,073.91
One-half of the delinquent school tax of 1854,	42,616.77
Probable amount for distribution in May, 1856,	\$543,332.24

SCHOOL TAXES. It is to be hoped that no citizen will permit himself to be misled by the miserable, pitiful and unfounded charge, that we are burdened and oppressed with school taxes, and have a less period of instruction for the same means than under the old order of things. Facts and figures can not be tortured into the service of such lovers of the dear people. They shun them as the owl does the mid-day sun. The school system shrinks from no just and truthful scrutiny, and its advocates decline no honorable challenge to its defense. The statistical portion of this report contains facts, unquestioned data, fully authorizing the statement, that more than one-half, almost five-ninths, of the tax-payers of Indiana pay on \$500 and less. On the present assessment of one mill on a dollar of property, and fifty cents on the poll, the school taxes of that portion will vary from fifty cents to one dollar, and no more. Did any of that five-ninths get their children taught three months for that sum? The aforesaid data also demonstrate that more than two-thirds of our tax-payers pay on \$1,000 dollars and less, showing that the school taxes of the said two-thirds will range from fifty cents to one dollar and a half and no more. Who of this majority of our citizens ever got *one child* properly taught three months, for even the maximum of the aforesaid scale? Are such taxes for tuition burdensome? Can such assessments oppress the masses? Shame! where are thy blushes? So much for tuition. Now let us look at the school-houses. If they already exist in sufficient numbers and in proper condition, there will be no school-house erection tax. If they are not found, it is quite pertinent to enquire where are those long and excellent schools so

feelingly remembered and so highly prized, taught in the golden age so much deplored as irrevocably passed? The echo reiterates the enquiry, that will be much more easy to repeat than satisfactorily answer. If we have no school-houses, tuition funds will be of little avail. I have little faith in any golden age of schools without houses, either in the past, present or future. The expense of the school-houses belongs to the croakers side of the question in dispute as well as ours. This is no misnomer, for when the truth is reached, it will be found that the masses have little or no sympathy with such sentiments. Is it doubted? Look at the *five hundred and eighty eight* school houses built last year, valued at \$166,656. Does the assessment of \$814,272.63 for school-house erection in four hundred and thirteen of our nine hundred and forty-one townships during the last year and now in process of collection, look much like sympathy?

Now for the library assessment that is breaking the camel's back. There is nothing like facts and figures in the solution of such questions of public economy. A *quarter of a mill* property tax, and a *twenty-five cents* poll-tax, is the crime charged against the revised school law. In the defense of our client, we shall summon as witnesses of his innocence, the aforesaid two-thirds, I might more properly say, three-fourths of the tax payers of this commonwealth. They all testify that the most they ever knew the prisoner demand of any of the aforesaid witnesses was *fifty cents*, and that his claim on more than two-thirds of the witnesses varied from *twenty-five to thirty-seven and a half cents*, and no more. With this testimony, we cheerfully let the case go the jury, confident that no twelve men can be found, who under the solemnities of an oath, and in view of the evidence, uniform, consistent and unanimous of such a body of our best citizens, will return a verdict of guilty. They are not willing to leave their seats. Their verdict is written on their very countenances. The court may as well call on them at once for their decision, without the formality of retiring. Is the prisoner guilty, or not guilty? Not guilty! This verdict will be pronounced just and righteous by the five hundred thousand readers of township libraries.

Another popular clamor, very intelligently raised, and very patriotically reiterated, is the wholesale and sweeping assertion that "the officers eat up the funds," "the locusts of Egypt consume the educational substance of the people." If this be true, it is time the Augean stable was thoroughly cleansed. But let us look at the facts in detail. The Superintendent is regarded by some as the greatest incubus, and therefore we will examine his case first. He is a constitutional officer and not the creature of statutory power. As a State officer, his salary is paid, not from the school fund, but from the fund appropriated to the payment of Executive officers, and therefore the school fund is not burdened with his salary.

HOPES FOR THE FUTURE. Our school system possesses elements of sterling worth and real power, and when fairly tested will vindicate its claims to the cordial sympathy and generous support of every lover of progress. The facts disclosed in this report show, that there exists a feeling of confidence among the people of its stability, and a growing conviction that it is worthy of all the material aid that it requires to develop its capacities for good. Its friends will find something in this annual document, that may be of service in carrying on another campaign in its defense. Foes it has as well as friends, and every transfer from the ranks of the former to those of the latter is a two-fold addition to its strength. Let not the zeal and courage of its assailants outstrip the ardor and valor of its defenders. The ardor of the former should provoke, as well as encourage, the fervor of the latter. Firm, persevering and unflinching, in our purpose and efforts, we have no fear of an unfavorable result. Confident of a happy issue to patient continuance in well-doing, let the friends go forward, remembering, that "deeds, not words," is the proper test of friendship to the cause of popular education.

Once let the public mind settle down in the conviction that the school system needs but a thorough and candid trial to evince the wisdom of its fundamental principles, and there will be no difficulty in gradually incorporating into its structure all those improvements that are the natural results and legitimate sequents of its great cardinal characteristics. Let the masses awake to the true conception of its relations to their best interests, and a cordial co-operation in promoting its progress, and our fondest expectations will be speedily realized. This report can not be more appropriately closed, than with the remark that on its pages will be found ample encouragement for effort, and abundant evidence of the necessity of prompt, wise and unremitting labor in the cultivation of a field, whose mental fruits shall be as imperishable as the intellectual soil that gave them birth, and whose moral products shall prove like flowers of heavenly perfume destined to bloom and shed their fragrance on earth, till transplanted to the paradise above.

KENTUCKY.

Annual Report of the Superintendent of Public Instruction, [Rev. J. D. Mathews, D. D.,] submitted Feb. 8th, 1886. 162 pages.

The origin and growth of the School System of Kentucky, and especially its rapid development under the superintendency of Rev. Robert J. Breckenridge, D. D., from 1847 to 1862, against Executive, legislative, and to some extent popular opposition, is one of the most interesting chapters in the History of Public Schools in the United States, and is full of instruction to those who are laboring to build up a system in States similarly situated. Before presenting a few extracts from the document above cited, we will introduce a statement drawn up by Dr. Breckenridge on resigning his office, in which he submits his views as to the progress, condition, and prospects of the system in 1853. The School Law in the Revised Code to which reference is made, was adopted in 1851, against the earnest and able opposition of the Superintendent, and inaugurated in some respects a new policy. In giving a history of the School System of Kentucky in a subsequent number, we shall have occasion to consider these points and to quote Dr. B.'s opinions. The following is the substance of the statement.

PROGRESS AND CONDITION OF THE SYSTEM UP TO 1853.

1. Every county in the State is completely organized, in so far as that it is believed a School District covers every neighborhood in the Commonwealth. It has cost an enormous amount of labor and pains, extended over many years, to effect this object. In order to accomplish it, various changes have been made in the school laws, from time to time, in various particulars, which need not be recapitulated here. The only general suggestions I have to make on this part of the subject, are ; 1. That no district ought to be allowed to contain more than about 50 children; and 2d. That all towns having a separate school system of their own, ought to be permitted to report directly to the Superintendent, instead of circuitously through the county Commissioner, as if the whole town were a single district. The former change would probably greatly increase the number of pupils, who actually attend school, as it would necessarily greatly multiply the schools themselves; and would be in every point of view a most desirable improvement of the school system, and in its present condition, very easy to effect. The latter change would relieve the schools in the towns of a great deal of wholly needless trouble and embarrassment, and put them on a footing to make greater efforts to enlarge and perfect themselves. The towns are naturally to be expected to take the lead in perfecting a local system of public education, and the highest policy dictates that they should be aided, not obstructed, in such an effort.

2. The school laws, as they relate to Commissioners, Trustees, Teachers, and the ages of pupils, do not need alteration. As they stand with regard to all those points, they only need to be regularly and efficiently executed. Touching other points, such as the office and duties of the superintendent, the duration of the schools, the condition of the schools as absolutely free schools, under all circumstances, they need very serious reconsideration. 1. As to the office of Superintendent, the school law in the Revised Code, made very considerable changes, every one of which was improper and injurious. Besides putting the matter as relates to that officer precisely as it stood before that law passed, in my opinion, the highest interest of the school system demand, that the Superintendent should be placed really, as well as nominally, at the head of the whole system. He ought to receive a compensation adequate to his duties and responsibilities; he ought to have an office, and one or two clerks, at the seat of government; and he ought to be held accountable for the faithful and enlightened execution of the system in every part of it. There is nothing more certain than that the system can not be efficiently executed, much less perfected, without an able and faithful Superintendent, whose office should be, not that of a clerk to the Board of Education, nor that of countersigner of the calculations of the Auditor, but that of head of a most important interest, under the Executive Department of the State. I have heretofore stated officially, that nothing but the deepest interest in my work, induced me to hold the office of Superintendent a single hour, after the passage of the school law in the Revised Code. 2. I have repeatedly suggested in my reports to the legislature, that in my opinion, the term of three months in every year,

fixed by law as the required duration of the public schools, is, as a uniform standard, too short. It would be a great improvement to change the law in such a way as to grant aid upon some principle that would hold out inducements to continual improvement in the schools. Say aid to every school taught three months in every year; further aid to those taught four months, and so on up to six or eight months, each year; increasing a little the State allowance, in some fair proportion to the duration of the schools; and upon some general principle, making the allowance depend, not upon the number of children *living* in the district, but upon the number actually attending school. The question is simply between short schools, nominally large, but really small, and long schools of moderate size, but precisely as large as they profess to be: between a method by which education will be actually brought in reach of all, and actually secured to all, and a method by which large numbers are really not in reach of it, and those who attend the schools are not taught long enough each year to reap the proper advantages which ought to be afforded them. 3. The remaining question, namely, that of the *absolute freeness* of all the public schools, is one of vital importance. I have discussed it at large in my reports, especially in the one for 1851. To teach 220,000 children three months in each year, supposing them to be scattered, as they must always be, through many thousand districts, and supposing the average of those districts to be about fifty children, can not possibly cost less than \$600,000 a year, and most probably must reach \$700,000. Add another quarter to the period of yearly instruction, which the best interests of the Commonwealth require to be done, and the yearly cost must equal, and may largely exceed \$1,000,000. Now the question for the State to determine is, whether it is better to provide by law for the raising of the amount of money necessary to make the public schools absolutely free, or to provide so much money only as will enable the people, by their own voluntary efforts, added to the State aid, to keep up the public schools, for such a period each year, as the law may prescribe. My own opinion is clearly in favor of the latter principle and method; namely, giving State aid to each locality, and leaving each locality to decide, according to its interests or wishes, the further question of absolute freeness. The school law in the Revised Code, makes the schools absolutely free, but does not provide the means of supporting them on an average as much as one month in each year, and only keeps up a forced appearance of doing so, by making the districts so large as virtually to exclude the third part of the State from all benefit from them.

3. The mode of distributing the public school fund before 1852, was simple and admirable. A system perfect in its principles, and exact and secure in its practical working, had been carefully and laboriously arranged and applied, and was working with complete success. By it every district received every year, the share allowed to it by law for the school taught in it, and within a few days, or at most a few weeks, these sums were distributed into every part of the commonwealth. The entire unclaimed balance of the school income, being the portion of all children where no schools were taught, was added to the capital of the school fund; and by this means the fund itself was made to increase faster than the ratio of increase of the children of the State. The Revised Code, which changed so many things, changed all this; and so changed it, as I think I have demonstrated in my report for 1852, as to have reached the summit of intricacy.

4. The school fund itself is large and productive, an honor to the State, a monument of public wisdom and virtue, an ample and noble provision, and if properly managed, sufficient for the education of the children of the State. It consists: 1. Of a tax of two cents [since by vote of the people made three cents,] on every hundred dollars worth of taxable property in the State. 2. Of State bonds to the amount of \$1,326,770.01. 3. Of 735 shares in the capital stock of the Bank of Kentucky, whose par value is \$100 each, \$73,500. 4. Of a certain bonus on other Bank stocks, whose value is not capable of being precisely reckoned. The income of this fund ought to be at present about \$150,000; and for ten years to come, it ought to average about \$160,000; and it ought to increase with the continually increasing value of the property of the State.

5. A vast work has been done for public education in this State. But it has been done under vast opposition, and against vast obstacles. To my predecessors in the office of Superintendent, I have never failed to ascribe a large part of whatever has been accomplished, and to claim for them the respect and gratitude of the people. I have held the office much longer than any of them, and besides what I may have done myself, I have reaped in some degree, the fruits of their labors. What we have all done, is capable of being generally, but distinctly summed up. An immense fund has been created, organized and secured; and when in a moment of political phrenzy it was destroyed, it has been by a glorious series of legislative and popular acts, retrieved, restored, augmented and made sacred. The whole State has been organized into School Districts, and a complete and general system of popular education, in its lowest stage, has been firmly

and universally established. Many thousands of comfortable school-houses have been erected, and many thousands of additional teachers have found honorable and remunerating employment. Many tens of thousands of the sons and daughters of the State have received, in these schools, the first elements of education; great multitudes of whom, but for these schools, would never have received any education at all. And, perhaps, more than all, a public sentiment, and what is better and deeper, a public principle, fixed, general and earnest, has been begotten in the mind and settled in the heart of our people, that the work is a good work, that it can be done, and shall be done. Our Superintendents have not done all this, though without them it could not have been done. The public press, that noblest gift of liberty to knowledge, has done its part. Many statesmen have done their part. Many philanthropists have done theirs. And many virtuous and noble citizens in the private, and not a few in humble walks of life, have done theirs. As for myself I count it one of the most fortunate events of my life, as it will always be one of its most precious reminiscences, that I also have had my share in a work so full of good, and good only.

6. For the further advancement and complete development of the system of public education in this State, an immense work remains to be done. I have never ceased to urge upon the legislature and the people of the State, that although the primary education of all the children of the Commonwealth, in every generation, ought to be considered the first and most important part of the work of public education, yet it was only a part, and moreover, a part which could be accomplished far more speedily and perfectly in its relations to a grand and complete whole, than it could be if attempted as the sole object of our efforts. Until the passage of the calamitous law in the Revised Code, all our laws on the subject of education, were conceived in the spirit of an equal interest in the State, in every grade and department of education, up to the highest, and in the idea of all being parts of a grand and comprehensive movement of society, for its universal perfectionment in knowledge, under the guidance of its own organized force, that is, the law itself. So that in the large views which I have cherished, I have only developed and defended the spirit of those numerous enactments, by which Universities and Colleges have been founded, by which Academies have been endowed out of the public domain, by which Institutions for the Blind and Deaf have been erected at the public expense, and by which in so many forms, and for so long a period, the public treasure has been bestowed, and the public will made manifest, in favor of universal education; universal alike in its subjects and its objects, as far as possible to every citizen, and for every useful part of knowledge. I believe that each one of my six reports to the legislature, assumes or expressly utters this broad, and as it appears to me, only worthy view of the subject; and several of them argue it at length. In a calm retrospect of the whole ground, from the position I now occupy, of a simple but deeply interested spectator, I see nothing to change in what I have so repeatedly advanced on this part of the subject. On the other hand, if the great experience it has been my lot to have acquired during the past thirty years on the whole subject of education, may be supposed to give any weight to my opinions, I frankly declare that I see nothing more plainly than that the interest and glory of this Commonwealth, are both put in peril, precisely in proportion as low and narrow views are cherished, touching the sublime duties which the State owes to her children, in connection with this great subject.

7. It may be that men will not always bear to hear it, and it may be, too, that it is not the part of carnal wisdom always to utter it. But wise and thoughtful men all know it, and they who have toiled in the sacred cause, may not ever be silent and forbear to proclaim it, even where none will hear. There is a glory, greater than the glory of wealth, and power, and arms, and conquest—the glory of loving, getting, cherishing, diffusing, perpetuating knowledge, whereby men may adorn their lot in this life, whatever that lot may be; and whereby, as far as knowledge can, they may be led to know a better life to come.

As some of the points presented above are of vital importance to the rapid advancement of public education, we give a few extracts from the Reports of Dr. Breckenridge for 1851 and 1852.

OFFICE OF SUPERINTENDENT. The office of Superintendent of public instruction was created, by law, as soon as this state embarked seriously in the grand effort to diffuse, universally, the blessings of general education; and it is not too much to say, that whatever has been practically accomplished by the State in that enterprise, is to be traced, first or last, to the existence of that office, and to the labors of those who, during the last fifteen years, have filled it. Still, during almost the entire period which preceded the adoption of the new constitution,

attacks were made upon the existence of the office itself, or upon its dignity and efficiency; and almost every recent session of the legislature witnessed attempts to degrade the office, or to abolish it, on the part of those who selected this as at once the safest and most effectual method of waging war upon the common school system itself. By the 2d section of the 11th article of the constitution of 1850, this office is made constitutional and permanent, and is to be filled by election, by the qualified voters of the commonwealth, every fourth year. Henceforward, he who shall fill it, will do so as the representative of the entire people of Kentucky—called by the voice of a great commonwealth to discharge a great constitutional trust, touching the very greatest interests of the people. The whole posture of things is, therefore, very essentially changed. And I, who during four years of great toil and opposition, experienced so many of the inconveniences, and endured, for my work's sake, so many of the embarrassments of the former condition of things, may well consider my election by the people, under circumstances of so much opposition and obloquy, to an office which, so far from seeking I did not even desire; a popular approval of the great principles on which I had administered the office, and whose successful application against incessant opposition, has made the system what it is.

IMPROVIDENT LEGISLATION. It is impossible that any human enterprise of great extent and considerable complication can be permanently sustained or carried on at all, while it is subject to incessant changes, on the part of persons who take no part in the practical execution of the enterprise, and who neglect to inform themselves minutely of the actual position of the system they thus persist in changing, as well as of all the probable effects of the changes they introduce. The school system of Kentucky has very great tenacity of life, as its past history abundantly attests; but even it is capable of being finally destroyed by experiments upon its life, which seem to have no end as to their multitude, and no object except to gratify some immature caprice. In every report I have made to the legislature, one prominent part of my duty has been, either to resist projects for change which involve fundamental revolutions, or to implore the legislature to repeal ruinous enactments which had been passed so silently, that the first knowledge I had of their conception was to find them printed in the statute books.

TIME REQUISITE TO PERFECT SYSTEM. The training of a whole people in any large system of thought, and the preparation of an entire country for any steadfast, enlightened, and continuous movement, in any direction whatever, are works of the very greatest difficulty to which human beings can devote themselves. They are works which, under the most favorable auspices, fail more frequently than they succeed. Of all such works, the successful establishment and the permanent support of a system of public education, is so eminently one of the very most difficult, that it may be confidently asserted, the world has never seen, and does not now possess, a solitary system, which can be pronounced even complete in its own circumstances, much less worthy of being considered perfect, as a model. Time, and patience, and peace—great practical experience, great theoretical skill, high administrative talents; all these are indispensable—and how much more is needful—to give to a great commonwealth a great system of education, even after the heart of the people has been won, and their intelligence aroused, and their liberality completely established. Now, has either time, or patience, or peace, been allowed in Kentucky, for any system whatever to be even understood, much less established firmly? Contentions, and changes, and general recklessness of results, have clouded the history, and harassed the entire career of this great cause in this state.

SYSTEM MUST BE ADAPTED TO CIRCUMSTANCES. The education of every human being, in the highest and best sense of that phrase, has in it that which the imitation of others can never supply, and the disregard of one's own personal development is the surest way to dwarf. And so every community must work out its own educational system, as really as it must work out its own political constitution, or its own social organization; and the two greatest errors of principle it can commit in such an attempt is, in the first place, to neglect and despise the fruits of its own experience; and, in the second place, to accept with ignorant credulity, and adopt with silly veneration, the pretended perfectibility which other communities have attained. Kentucky is, in many respects, one of the most homogeneous communities in the world, and, withal, one of the most peculiar. She is, therefore, one of the last states on earth that can safely disregard the indications of her own past development, or receive, with implicit faith, the experience and attainments even of New England, as better for her than her own, or bow to the theories even of New York, as more applicable to her wants than her own.

PUBLIC EDUCATION NOT LIMITED TO DISTRICT SCHOOLS. Does it satisfy the popular heart to say, that all the state ever proposed to do, was to limit herself strictly to the lowest possible provision—for the lowest possible grade of schools? This is very far from being my idea of the subject; very far from being the idea which the law exhibits, and the state cherishes. These district schools are the first, the fundamental, the universal necessity. But every one you make augments the necessity of a kind of school higher and better than itself; and every child you train in them, will unite its clamorous demand, with that of all who know that other knowledge besides knowing how to read and write, is useful to all men, and indispensable to freemen, that the state shall not now set down this ignominious mark, and vow that she will not pass over it. Such enactments are hostile to the spirit of the age in which we live, and utterly out of sympathy with the sentiments, the wants and the aspirations of the people of this state. Instead of pledging herself that she will do nothing—except teach her children the merest elements of knowledge—it would far better become the state to pledge herself that nothing shall ever be wanting on her part, to keep pace with the just demands and expectations of her children. And rather than one of the lowliest of those children should lack the means to fit it to serve the state well—a thousand statutes like this should be torn in pieces—and ten thousand such pledges to foster general ignorance, as it would extort from the legislature—should be scattered to the winds. And that will be the response of the people of the state, when they understand these things aright. While this report of these commissioners was passing through the press at Frankfort, there sat in the same town, a convention of the friends of education to which I have before alluded, and which, without knowing anything about what these commissioners had done, passed over this same great aspect of the subject. How did it strike that body of distinguished citizens, scholars, and teachers? Thus: they passed one vote, that every system of education, necessarily must embrace schools of a higher order than district schools; they passed another vote, that every such system must embrace some adequate method of training the teachers themselves; and they passed a third vote, that let a good system cost what it might, it should be carried into effect.

SUPERIOR EDUCATION. Kentucky has no interest that it more deeply concerns her to cherish, than the interest of superior education. The poorest of her citizens have a stake even more immense than others, in those ample provisions for the extensive attainment of knowledge, which, if the state make them not, never will be made for them. And those who pay the taxes have, besides all other pleas, this unanswerable one, that as the property of the state is required to sustain the educational system of the state, that system should, in naked justice, be made complete in itself, and worthy of the sacrifices required to support it. Every enlightened man should set his face against every attempt to foster vulgar prejudice against superior cultivation, and the means of obtaining it; for it is this, at last, which decides the race, in the career both of men and states. When only one man in ten thousand could write his name, that community was, no doubt, greatly distinguished, in which every man had acquired this art. But the human race has made great progress. And now shall we pause, and say we are greatly distinguished, and are satisfied with what we have done, as soon as we provide for that, which many other communities have achieved, and made the basis of higher progress, before we commenced our career? Or shall we strive with the greater earnestness to overtake the very foremost of our competitors in the race of glory, and side by side with the best and brightest of them all, press toward the mark for the immortal prize.

The people of Kentucky will have superior education; and if the state prefers that its youth should be trained only in other states, or in sectarian institutions, in this state, it has only to repudiate its university to secure that result. The people of the state will prefer good teachers to indifferent ones; and if the state prefers that these good teachers should be strangers and foreigners, rather than her own sons, she has only to refuse all provision for training them at home, and this result is secured.

COMMON SCHOOLS NOT NECESSARILY FREE SCHOOLS. It may be well doubted whether, taking the question in its simplest and widest sense, a system of common schools in which the state only *aids* the community, is not really better, for every condition of human society, than one in which the state bears the whole expense, and does the whole work. For my own part, I decidedly believe that the former, and not the latter, is the true plan upon which every possible form of human benevolence can be the most successfully exercised, both as it respects the real advantage of those who are aided, and as it respects the proper duty of those who extend the aid. God helps us to help ourselves; and he directs us to help each other in the same manner. Any other method does not develop so much as it deteriorates human nature; and this is the result of all human experience, as well as of all sound

reason, applied to the subject in its largest bearing. But if the question be limited to the more restricted form, namely, whether in a scheme of common schools for Kentucky, a system universally free, or a system partly supported by the state any partly by the people, is the better of the two; then, again, I would entirely dissent from the conclusions of the re-draft, and assert, that the absolutely free system forced into universal adoption, is neither possible in point of fact, nor consistent with the past experience, nor present wants, nor actual condition and character of our people.

The system which now penetrates every part of the state is free, or is not free, precisely as each school district, and each city and town shall decide for itself. In the overwhelming majority of cases, it is not, and never was free. In some few cases, of large and populous districts, and very small schools, cases in which the aid allowed by the state was sufficient to hire a teacher for such a school, for the term of three months, no additional tuition may have been demanded from any pupil. But these cases bear a very low proportion to the whole system. The spirit of that system is this: The state will "*encourage and aid the citizens to organize and maintain common schools.*" (*Act of 1845.*) Such are the express words of the general school law. The conditions of this aid and encouragement are few and simple. 1. That a school shall be taught three months. 2. That it shall be a *common school*. It shall not be a *select* school, nor a *private* school; but it shall be a *public*, and *common* school. A *common school* in opposition to its being a *select* school, and not in opposition to its being a *pay* school, which latter it might be, or might not be, as the people, encouraged and aided by the state, might determine for themselves.

The present Superintendent, Rev. Dr. Mathews, remarks:

CONDITION OF THE SCHOOLS AND THE SYSTEM IN 1855. The number of children returned to the Auditor's office between the school ages of six and eighteen is 229,403, making an excess over the number reported by the commissioners of common schools of 14,001. The highest number of children during the past year, reported as actually attending school is 113,763; the lowest number at any one time was 37,229; and the average number 73,035. The amount of money drawn from the school fund and distributed among the schools was \$150,501.40. There are 3,374 districts in the state. *Each district is a school, in which the children contained in it receive an elementary education.* Your minds should receive the impression distinctly that there are *actually 3,374 common schools taught in the state, with about 5,000 teachers, occupied in training and moulding the minds of 113,763 of the youth of our families!* And that more than one dollar for every voter in the commonwealth for governor in the last August election, has been appropriated to the children at school! Such details reveal to you the practical working of the system—realizing the beautiful sentiment of the eloquent and immortal Burke—"That taxes for education are like vapors, which rise only to descend again to beautify and to fertilize the earth."

POPULAR VOTE ON TAXATION FOR SCHOOLS. The last legislature passed a law, calling upon the tax-payers of the state to vote an additional tax of three cents on each \$100 of taxable property, in aid of common schools. The vote was taken last August. The result, as seen by the returns to the office of the Secretary of State, gives only five counties, out of one hundred and three voting adversely! More than three to one of the votes cast endorse the increased taxation. The people of Kentucky have, the second time, by an emphatic voice, proclaimed their devotion to popular education, and hearty readiness to yield their wealth to perfect the system so auspiciously and successfully begun.

The Report of the Superintendent for 1854, on the authority of the Auditor of Public Accounts represents the taxable property of the State for that year to be \$405,830,168.00. This amount is strictly *property* (not interest from capital, salaries, wages, &c.) Of the 80,218 parents who are returned as having an aggregate of 227,123 children between the ages of 6 and 18 years, 11,578 parents having 28,800 children have no property entered for taxation; 8,530 parents having 23,923 children are worth less than \$100 of taxable property; 13,391 parents having 37,859 children are worth \$100 to \$400 of taxable property; 6,824 parents having 19,687 children are worth \$400 to \$600 taxable property, and only 39,895 having 116,846 children are worth more than \$600 of taxable property. There are only 80,000 parents in a white population of 800,000 who own over \$1,000 taxable property—or who pay a school tax to the amount of \$3.00. It is not difficult to carry a school tax, where a large majority of the voters can be made to see that

they will get twice as much back for the education of their children as they are required to pay.

WANT OF A NORMAL SCHOOL. I beg leave to urge upon the attention of this legislature the desirableness of a Normal School—"an institution for training up persons to teach common schools." The importance of such a school needs not the example of European governments, or of other states of our Union, to enhance its claims before your minds. It forms the basis of any complete system of State education, and has ever been viewed as the greatest want of our own.

The trustees of Transylvania University, located in the beautiful and refined city of Lexington, have unanimously offered to the Legislature the use of their large and commodious college building and dormitory, and the services of an able and accomplished faculty, for the purposes of a normal school. *You are not called upon to make an appropriation by increased taxation, but to give your sanction to the direction of a small portion of the income of the school fund already provided for, for the support of such an institution.* In their memorial the trustees estimate the value of the property of the university at more than one hundred thousand dollars. And can the state decline such a noble and generous offer, when the sum of ten or twelve thousand dollars only will be required to commence the experiment at once?

Experience demands such an experiment in our state. More than eighteen years ago our common school system was commenced, and yet the supply of teachers has not been maintained as it was alleged by many from those schools. On the contrary, the number of foreign teachers increases instead of diminishing; statistics would, were it necessary, prove this assertion. You must have a fountain of supply—a radiating focus—a great heart in this system, to pour forth a pure circulation, whilst from the common schools there would be flowing to this center a current to be improved and enriched. The Normal School would exert such an influence. The very fact of the legislature of the state creating such an institution would make the profession a dignified and honorable one, and hundreds of young men and young ladies would devote their lives to such pursuits. In the language of the gifted Hon. Edward Everett: "If the teacher was to fashion your child's personal proportions, or to remodel his features, with what jealousy would you inquire after his qualifications for that task? Is it of less importance how he fashions and moulds the features of the mind? The husbandman can tell us if it is a matter of little or no consequence, whether you employ a skillful or an unskillful person to raise a crop of corn, the growth of a few months, under a simple process of culture. Every man's reflection and experience will satisfy him that the teacher's duty is important, complicated and arduous. It is not a mere piece of job-work to which any one may turn his hand, but a professional calling which requires knowledge, judgment and experience."

Our peculiar exigencies demand such an effort on the part of this state; ours is a border slave state, and the pioneer in a system of common schools among slave states. We not only need competent and thorough teachers, but they should be identified with our condition and circumstances. How can we expect men taught from infancy to believe that slavery is a sin, to refrain from insinuating, if not boldly teaching this belief? Why, they impart their peculiar accent and pronunciation to our children; will they conceal their sentiments from the unsolicitous and unsuspecting mind? If our best instructors are to be *borrowed from free states* as contradistinguished from slave states, the state of Kentucky may as well prepare for a premature old age at once, and proclaim that her system of common schools, conducted by foreigners, is digging her grave.

The Legislature made provision for the education of 150 teachers, annually, free of charge, at the State University. The details of the plan and its practical working will be presented in an account which we shall soon give of all the Normal Schools and other Agencies for the Professional Training and Improvement of Teachers, in the United States.

The Report is accompanied by a large mass of statistics giving the condition of the schools in detail, which can not be transferred to our pages, but which show, to those familiar with such returns, and who know what always lies back of such figures, that there is a great work yet to be done in Kentucky, to perfect the common schools.

IOWA AND LOUISIANA.

We are not in possession of a recent official document respecting the Common Schools of Iowa and Louisiana.

MAINE.

Annual Report of the Superintendent of Common Schools [Mark H. Dunnell,] for 1855. 162 pages.

This document contains, besides the Report of the Superintendent, tables exhibiting in statistical detail the condition of the schools in each town arranged by Counties, plans of school-houses, list of school apparatus, and extracts from the Reports of Superintending School Committees.

PROGRESS OF THE SCHOOLS.—Our public schools have received a generous support at the hands of the people. Fifty-four thousand dollars, over the amount required by law, (\$281,148,) have been raised by tax for their support. The State has distributed, for the same purpose, sixteen thousand dollars more than on any preceding year. The public mind has given other promises of much future good to the schools of our State. Many new and elegant school-houses have taken the place of the old and dilapidated; a large number of villages have discovered the superior efficiency and economy of a system of union and graded schools; many of the improvements in school architecture and school furniture have received a ready adoption, and in every part of the State, loud and urgent demands are made for better teachers. The services of such teachers have been more fully appreciated and generously rewarded than in former years. The people have hailed with gladness the agencies which have been used to increase the qualifications of those who are to mould and give character to the minds and future life of their children.

STATISTICS FOR 1854-55.—Number of towns in the State,	384
Number of towns that have made returns,	379
Number of organized plantations,	99
Number that have made returns,	62
Number of school districts in the State,	3,965
Number of parts of districts,	277
Number of children in the State between the ages of 4 and 21 years,	238,248
Number of scholars in the summer schools,	123,041
Average number in the summer schools,	91,894
Number of scholars in the winter schools,	142,220
Average number in the winter schools,	100,560
Mean average in summer and winter schools,	96,227
Number of male teachers,	2,559
Number of female teachers,	4,187
Average wages of male teachers per month, exclusive of board,	\$30.57
Average wages of female teachers per week, exclusive of board,	\$1.90
Average length of all the schools for the year in weeks and tenths of a week,	18.9
Amount of money raised by taxes for the support of schools, in 1854,	\$333,019.76
Amount required by law,	\$281,148.00
Excess over the amount required by law,	\$51,871.76
Amount of money received from the State,	\$54,398.96
Amount received from local funds,	\$16,900.57
Amount expended for private schools,	\$23,843.00
Number of school-houses built the past year,	128
Cost of the same,	\$62,808.00
Aggregate amount expended for school purposes the past year,	\$491,060.29
Number of good school-houses in the State,	1,752
Number of poor school-houses,	2,088
Estimated value of all the school-houses in the State,	\$870,005.00
Average amount of school money raised per scholar,	\$1.36
Amount received from the State per scholar,	\$0.30
Number of towns that have raised, as required in 1854, 50 cents per inhabitant,	292
Number of towns that have raised less than 50 cents per inhabitant,	75
Percentage of the valuation of 1850 appropriated to common schools, in mills and tenths,	3.4
Number of towns that have raised \$3 or more per scholar,	3
Number of towns that have raised \$2 and less than \$3,	23
Number that have raised \$1 and less than \$2,	334
Number that have raised less than \$1,	22

SCHOOL ATTENDANCE.—The attendance upon the privileges of our public schools is far too small. It is believed, moreover, that this want of attendance, in a great measure, exists among that class of scholars where it should the least prevail. The number in our schools, between the ages of sixteen and twenty-one, is

much less than in former years. This is a great evil and wholly subversive of the legitimate objects of our system of free schools.

DIMINUTION IN NUMBER OF TEACHERS.—The low price of wages at which they are compelled to labor is undoubtedly the principal cause. Many more inviting fields of labor present themselves, than that of teaching. The mechanic or the clerk often receives double the salary paid to the teacher. An increase in the compensation of the teacher, as well as of every other laborer, is made necessary from the greatly increased expense of living.

WANT OF WELL-QUALIFIED TEACHERS.—The want of well-qualified teachers for our public schools, is undoubtedly one of the greatest obstacles to their success. It is, however, a hopeful sign that the people are becoming more and more convinced, that however much they may do for their schools, in providing convenient and attractive school-houses, and in raising money for their support, yet without competent and skillful teachers, these schools cannot perform their true mission. This conviction manifests itself in loud demands for this class of instructors, and in an increasing willingness to remunerate them according to this more reasonable estimate, in which their services are beginning to be regarded.

SCHOOL MONEY.—Prior to March 30, 1853, each city and town was required by law to raise by tax for the support of schools, at least forty cents for every inhabitant, taking the last census as the basis. At the above date another law was passed, requiring fifty cents for every inhabitant. The school money for the year ending April 1st, 1855, was raised in compliance with this last provision. The whole amount raised was \$333,019.76, while that required by law was \$281,148.00, showing an excess of \$51,871.76.

The amount received from the State the past year was \$54,398.96; from local funds, \$16,990.57; and that expended for private schools, \$23,843.00; making in the aggregate \$428,252.29, as the sum expended for school purposes. The amount raised by law gives to each scholar on the average, \$1.36; that received from the State, \$0.30; and from local funds, with the sum expended in the support of private schools, \$0.12; making an average sum to each scholar in the State of \$1.78.

A law was passed April 20, 1854, which was to take effect January 1st, 1855, requiring that sixty cents for every inhabitant shall hereafter be raised for the support of schools.

SCHOOL-HOUSES.—Very decided improvements have been made in the location and internal arrangements of many of the school-houses, which have been built during the past few years.

The larger portion of our school-houses are too small, badly seated, badly located, without the means of ventilation, destitute of playground and outbuildings.

The invaluable work on School Architecture, by the Hon. Henry Barnard, LL. D., should be made the property of every district, or at least of every town in the State. It is a fund of the most reliable knowledge upon every branch of this important subject. It has been furnished to every town in the State of New York, and by legislative appropriations, to the several towns in the States of Massachusetts, Connecticut, Rhode Island, Vermont and New Hampshire, and the province of Upper Canada; and to every district and library in the State of Ohio, and to every town library in the State of Indiana. An edition of five thousand copies of an abridgement of the work has been circulated among the promoters of schools in England, Scotland, and Ireland.

SMALL DISTRICTS.—This is one of the greatest evils attending the practical operation of our school system, and one which should command the serious reflection of the people.

GRADED SCHOOLS.—A graded school is a classified school, consisting of two, three or four departments, to each of which the pupils are distributed, according to their ages and attainments, and placed under teachers adapted to each grade. These departments are generally denominated the Primary, the Intermediate, the Grammar, and the High School. The larger cities have very generally adopted the four departments. In some of the smaller cities, and larger villages, the system embraces but three, the Intermediate being omitted; and in the smaller villages, and populous rural districts, but two, the Primary and Grammar. In the cities, two or more classes of school-houses are provided; while in the villages, and populous districts, which have adopted the graded system, one commodious edifice is usually erected for the accommodation of all the departments. Very many villages and neighborhoods have not yet attended to a proper gradation of their schools, although the number of their scholars renders it not only practicable, but highly necessary to their success.

PUBLIC HIGH SCHOOL.—The highest department in a system of graded schools is usually denominated the High School. Wherever this school has been established, whether in the city as a part of a complete system, or in towns, sustained by the union of all, or even two or three contiguous districts, it has never failed, when properly constituted and conducted, to receive universal favor and approbation. It greatly increases the advantages to be derived from our common schools. It furnishes to all, to the poor as well as the rich, the means of securing a complete English education. The High School exerts a most salutary influence upon the lower schools; stimulates the efforts of teachers; increases the exertions of scholars by the hope of promotion; economizes labor by enabling the teacher to give thorough and systematic instruction to a much larger number of pupils; furnishes in due time, well-qualified teachers for all the schools of lower grade; affords an opportunity for thousands to obtain an education of a higher order, who without such aid, would be doomed to pass through life with the mere rudiments; evokes genius, develops talent, and draws out those intellectual and moral resources, which the spirit of the age, and the highest interests of the State demand; it supercedes the necessity of private schools, and thus relieves the community of sustaining a two-fold system of education.

There are no better schools in the Commonwealth than some of our public high schools, and to these families of the highest character now prefer to send their children. This makes our schools common in the best sense of the word, common to all classes, nurseries for a truly republican feeling, public sanctuaries, where the children of the Commonwealth fraternally meet, and where the spirit of caste and of party can find no admittance.

SCHOOL SUPERVISION.—Men should be elected to this office who are thoroughly qualified for its duties, and who, at the same time, are not afraid to work, but are willing to work hard; and men, who are able to determine whether a teacher is really qualified for his work. In the election of no municipal officers should voters so seek for absolute fitness, as in the election of those who are to superintend so important an interest as that of their common schools.

PRINTED REPORTS.—When the committee have submitted their report to the inhabitants of the town, it should be printed and a copy sent to every family, to be read by parents, teachers and scholars. Unless printed, however faithfully this document may have been prepared, and however valuable in statistics or suggestions, it will fail to produce much positive good; for it is usually read near the close of the town meeting, when most of the voters have gone to their homes, or their minds are occupied with some matters of business. Committees would be encouraged in their responsible and often arduous labors; and would seek a greater acquaintance with the general duties of their office. Teachers would seek to deserve the approbation of the Committee and the community, were their character as teachers to be set forth on the printed page, and read by every family in town. It would encourage good teachers, and drive poor ones from the field. It would tend to create a healthy emulation among the parents and scholars of the different districts, as well as increase the amount of reading matter on the subject of schools.

TEACHERS' CONVENTIONS.—A Teachers' Convention or Institute, is an assemblage of teachers for a period extending from one to four weeks, for the purpose of reviewing the studies they are to teach, and to witness, and to some extent practice, the best methods of arranging and conducting the classes of a school, as well as of obtaining the material ideas of experienced teachers on topics of educational improvement. The instruction is designed to be of such a character as shall furnish a model for common school exercises, although the former will naturally partake more of the oral method than the latter. Owing to the shortness of the time during which they are usually held, they only aim at giving some practical skill, some knowledge of the art of teaching. The evening sessions are generally occupied by lecturers, who discuss some of the more important topics embraced within the range of common school interests.

The Conventions in twelve counties, was held five days and evenings, each; in one, Aroostook, but three, owing to its remoteness from the places of holding in the adjoining counties; and in two, four days each, in consequence of the lateness of the season. The hospitality displayed in the towns where the Conventions were held, was exceedingly gratifying. Ample accommodations were provided for all the teachers, and every arrangement which could conduce to the pleasure and comfort of all.

The whole number of teachers in attendance at all of the Conventions was six hundred and ninety-one. Twenty-three were present at the second Convention, so that the whole number of different members was sixteen hundred and sixty-eight. This number makes an average at each Convention of one hundred and thirteen.

To support this institution in Massachusetts, \$4,500 are annually expended, and in New Hampshire, \$5,200. The \$2,000 appropriated for its support in this State will meet all the expenses only by the use of the most rigid economy. These expenses consist of the salaries of instructors, their board and traveling expenses, the sums paid to lecturers, for the use of halls, circulars, advertising, postage, &c. We have about 241,000 scholars, so that the \$2,000 expended to increase the qualifications of their teachers, will be but twelve mills to a scholar, and when compared to the whole cost of all our public schools, will be as four mills to one dollar.

LECTURES ON EDUCATION.—Sixty-nine public lectures were delivered at the evening sessions of these Conventions, and I am happy to report that they were very generally of a practical character, well calculated to instruct and improve the members of the Conventions in their duties as teachers; to awaken within them as students a livelier enthusiasm; and to arouse in the minds of citizens a deeper interest in the cause of common schools. Large and attentive audiences, and in some instances, filling the house to overflowing, characterized these evening sessions. The interest in each county was an increasing one, and not unfrequently towards the close of the week, brought in large numbers from the adjoining towns.

NORMAL SCHOOLS.—The more prominent agency for training teachers, is the Normal School. It has been incorporated into the school systems of all the leading powers of Europe, and a number of the States of our own country. The Normal School aims to give the true science of teaching. Its history is a triumphant vindication of its usefulness.

In my judgment, the time has come, and the condition of our schools imperiously demand, that measures should be adopted for the establishment of a State Normal School.

Such an institution would give a completeness to our school system; it would become a rallying point for the friends of popular education. It would open a fountain at which many a young man and woman could drink in the true spirit of the teacher's vocation, and from which they would go forth to the various sections of the State, becoming pioneers in the work of infusing a new life and vigor into the common schools.

DUTY OF UNIVERSAL EDUCATION.—Knowledge is the birthright of all, and our common school system acknowledges this truth, for it brings the same means of intellectual culture to the children of the poor as well as the rich. Here all can come, and each receive the intellectual armor fitting him for the conflicts of life. It is a duty which we owe our age, our State, and country, to seek a thorough education of all classes, for only as they are thus educated, can we reasonably expect that they will discover the true laws of individual and social progress, and the necessities of a government of law. That part of our civil constitution which provides for the maintenance of our common schools, is a perpetual monument to the intelligence of its framers. Let, then, our common schools be cherished for their peculiar fitness for the part assigned them in our social system. Let districts study their true interest in regard to territorial limits, and the classification of their scholars; let the school-house be made pleasant and attractive; let the teachers employed, be intelligent, conscientious and patriotic; let towns, in their corporate capacity, make provision for the education of every child within their limits, and let them elect men who will faithfully and energetically superintend their school interests. Let parents, too, unite in this work. Let them visit the school; extend to the teacher an approving word; seek for information upon each and every subject connected with the proper management of schools, and keep constantly in view the primary objects of a school education. Let the State not forget to cherish and develop the elements which are soon to shape her destinies; let her bring to this work all the agencies which experience has pronounced effective, and let her secure their faithful execution. Through the agencies already in use, let information be scattered among the people; let the people be addressed; and let the teachers be brought together in convention, and there instructed into the responsible nature of their profession. Let experience and sound wisdom decide in the selection of other agencies. Let the Press lend its powerful voice in the defense of all proper measures for the improvement and efficient working of our school system.

MARYLAND.

There is no general school system in Maryland. The report of the Committee of the Public Schools of Baltimore, will be noticed in the review which we propose to give of the School Document of Cities.

MASSACHUSETTS.

Nineteenth Annual Report of the Board of Education, together with the Nineteenth Annual Report of the Secretary of the Board. Boston: 1866. 328 pages.

This document of 328 pages contains the Annual Report of the Board and their Secretary, (Rev. Barnas Sears, D. D., now President of Brown University,) the Reports of the Visitors of the four State Normal Schools, Reports of the Agents employed to assist the Secretary, by visiting schools in different towns, and addressing teachers and parents, Extracts from the Annual Reports of the Town School Committees and Abstract (town, county and state-wise,) of the Annual Returns of the condition of the Schools, with a valuable Index of five pages, as valuable as any five pages in the document.

The Board remark:

GENERAL CONDITION OF THE PUBLIC SCHOOLS IN 1855.—The results of the past year seem calculated, if possible, to increase the confidence of the State in its system of public instruction. Not that our system is perfect; but there is among the people a universal interest, which has been manifested in increased appropriations for the support of schools, in the erection of improved school-houses, and in the demand for well qualified teachers. This progress, so satisfactory to the friends of education, and so essential to a system of instruction eminently popular, is evidence that the judgment of the people harmonizes with the policy which the legislature has seen fit to pursue.

The appropriations for the school year 1853-4, including only the wages of teachers, board and fuel, were \$1,013,472.26; and for the year 1854-5, the appropriations for the same purposes were \$1,137,407.76; being an increase of \$123,935.50, equal to twelve per cent.

This is a larger advance than has ever before taken place in the Commonwealth, whether we regard the aggregate or the ratio. These appropriations were self-imposed by the people, and it is not known that they have in any section been the subject of general complaint. But, on the other hand, the majority of the people seem to consider that the support of the common schools is an indispensable element of public prosperity, and that their influence affects favorably the material, as well as moral and intellectual interests of the State.

STATISTICS OF NORMAL SCHOOLS.—There were 332 pupils in the four State Normal Schools, viz:

	Males.	Females.	Total.
Bridgewater,	24	44	68
Frammingham,		35	35
Salem,		121	121
Westfield,	18	90	108

STATE SCHOLARSHIPS FOR TEACHERS OF HIGH SCHOOLS.—Two classes of twelve students each, have entered the several colleges of the Commonwealth upon the foundation established by the Act of 1853. Sufficient time has not elapsed to justify an opinion of the merits of this measure, based upon experience; yet every circumstance known to the Board of Education leads to the conclusion that the expectations of the State will be fully realized. The specific object of the Act is to furnish competent teachers for the high schools; and there has never been a time when the demand for such teachers was greater. There are probably one hundred high schools in Massachusetts, and the number of towns required by law to maintain such schools is annually increasing. These schools ought all to be supplied with well educated, thorough teachers. In addition to this manifest want of our own, there is a constant, and in some cases, pressing demand, for teachers of different grades to go into other States. This demand has in a few instances borne hard upon our own schools. It is not, of course, the primary object of our system to furnish teachers for other States, nor does it seem to be wise to attempt any restriction. It is no trifling compliment to our system of public instruction, that it furnishes teachers whose services are desired by the citizens and governments of other States.

RESIGNATION OF DR. SEARS.—The Board feel that by the resignation of Dr. Sears, the cause of popular education in Massachusetts lost a zealous, faithful, and highly cultivated supporter and friend. His administration was eminently calculated to conciliate public sentiment in favor of education, to consolidate the system, and to bring it into harmony with the wants of the people and the policy of the legislature. During Dr. Sears' administration great progress has been made.

The appropriations have been increased, school-houses and apparatus have been improved, and the professional character of teachers has been elevated and their influence extended. We are sensible that these changes are in a high degree owing to the labors and wise counsels of the late Secretary.

The Secretary of the Board closes his connection of seven years with the public schools of Massachusetts, with a masterly survey of the dangers to which the system is exposed, and a consideration of the limitation of its usefulness.

UNREASONABLE HOPES OF SPEEDY RESULTS.—It is often supposed that great results can be produced in a single term of twelve or fifteen weeks. Both teacher and committee aim at this rapid mode of manufacture. True education is that which aids the slow and healthy growth of the mind—the incorporation into it of principles and the formation of tastes and habits, the full value of which will appear only after mature years have developed their tendencies. The highest and best parts of education are incapable of exhibition. The show made at the close of a term is well enough to amuse children and their fond parents, but is often like that of newly dressed pleasure-grounds, adorned with trees and shrubs fresh from the nursery, having a show of vitality in the foliage, though as yet drawing no sap from the root. Such frostwork of the school-room is soon dissolved and generally passes away with the occasion. All attempts at such premature results of education are nearly useless, and yet our system of employing teachers by the term renders it almost necessary for a teacher who is ambitious of distinction, to lay his plans for that kind of superficial culture and mechanical drill which can be produced in a few weeks, and shown off as evidence of marvellous skill. An experienced educator or observer can, indeed, inspect the processes of education, and judge of their fitness, as an agriculturist can of the preparation of the soil, and of the quality of the seed. But most persons must wait for time to bring forth the fruits of education, before they can form a true judgment of its character. All expectations of triumphant success in the schools, founded upon such views of speedy results as those above alluded to, are destined to fail of their fulfilment. And when the people have been misled by these vain hopes, and find themselves in the end bitterly disappointed, the public schools will be in danger of languishing, bleeding from wounds inflicted by their own friends.

LIMITATIONS OF THE TEACHER'S POWER.—While that [the teacher's] power is great, when properly sustained by collateral influences, it has yet many limitations, partly from the nature of the human mind, and partly from peculiar circumstances. One of these limitations is to be found in the individuality of the pupil's mind. When it is said that the teacher has a power over the young, like that of the sculptor over the block of marble, some abatement is to be made for the rhetorical character of the statement. The marble is entirely passive. It has no embryo nature to develop, no hidden tendencies to some unknown result, no secret processes working great changes, expected by no one, and bursting, at length, suddenly upon the view by some new exhibition of talent, or some new form of character. To such an extent have these phenomena been observed in original minds, that a conclusion has often been hastily drawn disparaging to all education. All real talent, it is sometimes said, is self-developed and self-regulated. The truth contained in this statement is, that some minds have such strong intellectual instincts, and such natural energy, that they are less dependent on a teacher's aid than others; that in struggling with difficulties and overcoming obstacles, they acquire an independence and power which more than make up for a want of early elementary training. But even upon such intellects the influence of a genial teacher must be favorable, while to those of the common class it is indispensable. Still, it must not be forgotten that there are under-currents in almost every pupil's mind, which are not easily detected by the teacher or by the parent, which sometimes conduct to issues wholly unexpected. When remarkable powers and capacities are working thus in secret, the school training may come so little in contact with them as to do but little good or harm; or it may be that an earnest teacher's endeavors have been nothing but unsuccessful contests against natural proclivities which could not be resisted, but might, with more skill, have been guided and modified. In other pupils there is a weakness or dullness of intellect which effectually limits the teacher's power. His labor is not lost, it is true; but the public expectations are not in these instances realized. No one ought to be disappointed or discouraged at such results. They ought to be foreseen, and none but reasonable expectations ought to be cherished.

Another limitation of the teacher's power lies in himself. Education, when pursued as a definite object, is the action of a well-formed and well-furnished mind in forming and furnishing another's mind, while the latter is in a plastic state. Some of the difficulties connected with the mind that is to be educated have been

considered. There are others, not less real, growing out of the educator's mind. I do not refer here to the necessity of knowing and comprehending the subjects to be taught, without which no one ought to find employment as a teacher; nor to the necessity of a thorough apprenticeship in the art of teaching, respecting which there remains, at the present time, little doubt; but to that study and control of one's self which must be even more searching and rigid than of the pupil. The mind that exerts a formative influence upon so many others should itself be a model mind. This, though simple in theory, is not quite easy in practice. The teacher's mind cannot be constructed anew, according to prescription. And yet there are few teachers whose minds do not need remodelling, or, at least, to be changed in many particulars, in order to give them even a relative perfection. What shall the teacher do in these circumstances? Shall he passively resign himself to his lot, and teach and govern the young in the manner which is to him most natural and easy? or shall he have a perfect standard, a beau ideal, in his mind, and then by an analytical process, subject himself to the most searching examination and record the results for his own careful inspection? Suppose there are idiosyncrasies which can never be remedied. Suppose some of the organs in the mental constitution are feeble and almost imbecile. Suppose there are peculiar tastes of decided predominance, and yet of questionable character, and habits that are strong and obstinate, and yet objectionable. There may be a want of clear and well-settled principles in morals, so as to furnish no basis for a system of sound discipline: or there may be remains of early vicious habits, which leave their taint long after the correction has been applied. How are such things to be managed? If a teacher could be relied on for making an examination of himself with the thoroughness of a philosopher, and for forming an idea of himself with the impartiality of an indifferent spectator, one class of difficulties would be disposed of. If, moreover, he had the power to supply what is wanting and to remove what is evil, that would enable him to accomplish something of great moment. If he would conscientiously give his earnest attention to the subject, and do what he could towards remedying defects, or by a careful and cautious procedure so manage himself, his instruction, and his discipline, that the injury or loss sustained by the school should be reduced to its minimum, a very important end would be secured. But how many of the teachers actually selected and employed, possess these traits of character; and how many will there be after all the efforts made by the public to bring about such a result? If, then, we found our expectations on ideal views of teachers, of teachers as they should be, and not as they are, it is quite clear that the hour of our disappointment, though it may be delayed, will certainly come.

EDUCATION BEYOND THE SCHOOL-ROOM.—There are circumstances in the history of a people which have their educating influence, and yet cannot be changed. The pioneer in a new settlement is not bound to perform, in respect to education, more than the state of society will admit. If the population of the country is sparse, and there is a general want of refinement, and the means of high intellectual culture do not exist, he cannot be held answerable for deficiencies which he cannot prevent. In the rapid growth of great cities, and the general increase of wealth and luxury, difficulties of an opposite character are experienced. Here there are positive tendencies to a corruption of the public manners which no merely human power can remove. In the ordinary course of events, wealth and luxury will, as all history teaches, exert an influence over the young, taking away the motives to industry, economy, and other home-bred virtues, stimulating the more dangerous appetites and passions, educating them, in short, to anything but to a useful and honorable life. This is a miasmatic influence, which no vigilance of the wealthy parent can, with certainty, keep from injuring his offspring.

A people may, as is now the case with us, be subject to influence from the presence of a foreign race of men. The domestics in our houses form a part of the circle in which our children are reared. Falsehood, deception, and petty frauds, practised daily in the nursery and about our homes, by persons in our employ, will leave their effect on the tender susceptibilities of childhood. The men who are employed about our houses, gardens, and farms, or in our workshops, uttering words of profanity and of vulgarity, are acting most effectually in destroying the virtuous sensibilities of our sons, and in sowing the seeds of vice. The influx of a more intelligent class of foreigners, educated in the corrupt monarchies of the old world, brings with it other perilous influences, besieging the very citadel of our social virtues. The refined epicurism and infidelity, imported largely at this time from countries where the popular religion is a state trick or a farce, is in danger of being diffused in social circles by men of some literary and scientific pretension. The Sabbath is to many of them a mere day of amusement. The church and its holy services are spoken of with levity and disrespect. The manners, the sentiments, and the virtues of our worthy ancestors are ridiculed, and even the most

sacred institutions of society, the marriage and the family relation, are held in little esteem. These things the parent may see and lament, but can he prevent them, or be sure that his children are entirely shielded from their influence?

Again, the crowds of young people rushing from the country into the cities, and the gregarious life of childhood and youth in our numerous manufacturing towns and villages, furnish peculiar facilities for the diffusion of corrupt principles and morals. The former find, in their new places of abode, pleasures set before them appealing to every sense, and in gradations adapted to every variety of the intellect. The current of sensuality, more or less refined, is so strong that it too often sweeps almost every thing before it. The village has fewer, but more vulgar entertainments for the young, and temptations peculiar to itself. This life of congregated human beings, where money, leisure, shows, and a succession of excitements are the objects of pursuit, is now, with inconceivable power, educating myriads of children who will soon be called upon to act a most important part in history, deciding, perhaps, the destinies of our government, and affecting, more or less, the hopes of mankind, as involved in this great experiment. Are the public schools justly responsible, if, in such a state of things, a new generation should not turn out to be all that the friends of virtue and humanity could desire? Are we called upon to promise or to believe, that, unaided and alone, they will have the power necessary to turn back the tide of degeneracy setting in from so many different points?

The general tone of society, when at variance with the influence of the conscientious teacher, is a powerful check upon the success of his efforts. Indeed, as to manners and morals, it is society chiefly that educates. The influence of the school-room is limited in respect to time. A part of each day is spent by the pupil in the family, and a part in promiscuous intercourse with others. Every child, on entering a school for the first time, carries with him a character formed elsewhere. This character is what parents and companions have made it; and being daily nourished by intercourse with these, it will be very likely to be maintained, notwithstanding the efforts of the teacher to the contrary. But suppose the teacher to be so fortunate as to gain the victory for the present. When the pupil leaves the school at the early age which is now common with us, he returns to the influences of that same society where he first drank in a poisonous atmosphere, and where, in all probability, the defeated party will retrieve its losses. A teacher may not despair even in these circumstances. He may prevent much evil. He may prepare the soil for some other persons to cultivate with better success. He may produce enough of effect to constitute a sufficient reward for his labors, though far below his wishes. He may, in many instances, make an impression on the heart which time will never efface. At any rate, having done what he could, he will share with the good of all ages in the high satisfaction of having done his duty.

DOMESTIC DISCIPLINE AND PUBLIC MANNERS.—A distinction must be made between the legitimate sphere of domestic discipline and the more general control of public manners. Who is to guard the morals of the young, when they are abroad and in company with such persons as they may chance to meet? How can their eyes be kept from polluting sights, and their ears from sounds freighted with immorality? Here, at some place of village resort, they see what they ought never to see, and hear words of strife, of ribaldry, and of blasphemy, which ought to be confined to dens inaccessible to childhood. Still worse is it when the streets swarm with juvenile offenders, because the sympathies of the young with each other are so strong. The vicious practices of adults may be so viewed, where proper instruction is given, as to be repulsive, and be turned into a warning. The grosser forms of vice in adults may not be so seductive as those that are more decent. But with children associating with each other it is otherwise. Their vices are more contagious. When a child is outdone by another in wrong doing, there is a silent appeal to the courage of the former, which few have sufficient strength to resist. Children, moreover, have selfish passions. They readily listen to the recitals of a companion who describes the little arts by which he procures forbidden indulgences, escapes the vigilance of parents, and deceives them. One such companion has it in his power to corrupt the children of a whole neighborhood; and it often happens that a group of boys form connections in practising petty vices, which exert a pernicious influence upon their character far outweighing the salutary influence exerted by parents and teachers. It may be said that if parents cannot extend their control over the morals of children generally, they can, at least, keep their own children from bad companions. This is true but in part. Children are so fond of each other's society, and so weary of the monotony of retirement, that they seize greedily upon all the incidental opportunities which present themselves for meeting with companions, making choice of associates rather from congenial tastes and feelings than from moral considerations. The

greatest security will therefore be found to exist in those communities where, by various means, the youthful population are generally kept far from the contamination of vice. What may be done to repress juvenile misdemeanors, as they are now manifested too commonly in public places and in the streets, is a subject worthy of consideration. The difficulty lies chiefly with those children who are neglected by their parents, and with others who, when beyond the observation of their parents, are swayed by the example of the former. The negligence of many parents, who otherwise are good citizens, in respect to the moral training of their children, is almost unaccountable. They provide liberally for their physical wants, but leave them, as if strangely indifferent to their higher interests, to form their own moral habits and tastes. They do not apply their minds constantly and earnestly to the subject of forming their character. They neither study the principles, nor inform themselves of the best methods, of training their children to wisdom and virtue. Their minds are engrossed with business, or with the demands of social life. They act as if they believed that a pecuniary provision for the present and future support of their offspring were the main part of parental obligation. But is there anything more sure to end in disaster than leaving indiscreet and inexperienced children, in whom the passions are strong and the understanding weak, to choose their own ways and their own associations?

POPULAR LITERATURE AND AMUSEMENTS.—The daily papers lie upon the tables of every household. The angry quarrels of editors with each other, the bitterness of political controversy, and the mendacity of the press on the eve of elections, furnish a very unsuitable aliment for the young. And how many of the short, spicy paragraphs, with which the editor or contributor seeks to enliven his columns, are addressed to the sensual passions, in language and tone so lascivious that no pure minded father could read it in the presence of his family. This is the more alarming as a sign of the times, from the circumstance that not only is the supply of material such in amount as no other age ever knew, and the reading habits of the young, in consequence of our public schools, far in advance of those of adults in former times, but that those papers which are the least scrupulous in their moral tone, have often a wider circulation than others, and are even extensively patronized for the use of families. It is not necessary here to refer particularly to much of the lighter literature, of no better moral tendency, which finds its way to the homes of the young, vitiating their imaginations with pictures of scenes which no pure mind can contemplate with pleasure. Many of the popular amusements, too—once an occasional luxury, but now a necessity of the young—have the same character and tendency. They must be adapted to low and vulgar tastes, in order to attract the multitude and be made profitable. A large proportion of the support they receive comes from children, for whose injury the fond, but inconsiderate parent, pays the price more freely than he does his school tax.

HASTY LEGISLATION TO BE AVOIDED.—As we are destitute of the guidance of any well-settled and long-tried system of school legislation, in advance of our own, in any of the States of the Union, and as those of the old world are not adapted to our condition, we are obliged to develop a system of our own as exigencies arise, and to proceed sometimes without the light of much experience. Many new laws relating to schools have been enacted within a few years, and these do not always perfectly harmonize with each other. It would, perhaps, be well if new laws proposed for adoption, should first undergo a little more careful scrutiny by some person, or persons, familiar with all the existing enactments on the subject, and the principles on which they are founded, so that a strict consistency and unity of character should be preserved. The importance of this subject will not be diminished at all by the revision of the laws now in progress. Unless great caution be used, the adjustment of all the parts of the system which are now so disjointed, will soon be disturbed again. The danger lies more on the side of over-legislation than of too little legislation.

SCHOOL BOOKS AND APPARATUS SHOULD NOT BE SUPPLIED BY THE STATE.—Admitting the necessity of furnishing the public schools with books, maps, and apparatus, there is no good reason why the towns and cities should not themselves supply the means of doing it. They certainly have the ability. If they are unwilling to do it, there is little reason to believe that they will provide for the safe-keeping of this species of property. The towns, if they purchase their own books and apparatus, can select precisely what they need, whereas the State cannot adapt its bounty to circumstances, but must adopt the same measure for all. It will thus happen that schools already furnished with these things will have a superfluous supply. The history of the past shows that money so appropriated does not accomplish so much good as a less amount would do, if raised and expended by the towns themselves.

PROVINCE OF THE STATE AND THE PEOPLE.—The State does not attempt to confer the boon of education upon the people; it only gives them the power and the requisite facilities for supporting schools. It indeed requires certain schools to be maintained; but it leaves, in great measure, to the will of the people the degree of excellence which they shall attain. While this truly philosophic and well balanced system, devised by the wisdom of the State, receives the admiration of the world, there are, we regret to say, towns, few indeed in number, and becoming fewer every year, which complain of State interference, and wish to be left in their native independence. It is regarded as an inconvenience to be compelled to maintain public schools for a given length of time each year, and to be at the expense of paying for the services of the school committee, which might so easily be dispensed with.

Human foresight can scarcely devise a way of organizing a Board of Education, and of appointing its members, and the officers and agents employed in its service, in which the liabilities to abuse shall be less, and the certainty of usefulness greater. Men selected for their wisdom and experience devote their best thoughts to the great interests committed to their hands. The man whom they place at the head of the department, enjoying their confidence, and receiving their counsel, devotes himself exclusively to the service of the people, collecting from every quarter the most valuable information, and throwing it out from the heart of the State to circulate in every artery and vein. Side by side with him stand able men, familiar with the practical working of every part of the system, who visit every town and village in the State, and render most valuable assistance to the local committees, and to the teachers of the schools. Besides all this, the Board has rendered a noble service by its Normal Schools and Teachers' Institutes, in elevating the teacher's profession to its present high position. It is strange indeed that there should be a single town in the Commonwealth that can overlook the great benefits resulting from this wise policy.

The increased intelligence of the people will, among its other results, manifest its power in the increased ability and skill with which they engage in their various enterprises, producing within the period of a single generation an increase of wealth which will far more than compensate for all the cost of education. Any town which enjoys the reputation of having good schools, will find, in that circumstance, an element of growth. It will, on that account, draw to itself from abroad wealth, intelligence and virtue. Both the value of real estate, and the refinement and civilization of the people will be enhanced. If we take a higher view, and inquire how the inhabitants of a town can make the most valuable contribution towards the improvement of mankind, we shall unhesitatingly reply, by sending out into the world well-educated and well-trained men and women to act their part with honor in advancing the progress of civilization, and all the interests of society.

IRREGULAR ATTENDANCE OF PUPILS.—The irregular attendance of the pupils of the public schools is a subject that deserves the attention of all who have, in any measure, power to diminish it. The loss of one-fifth of the benefit for which pecuniary provision is made by a public tax, is a just subject of complaint on the part of the tax-payer. If society has the right to levy a tax upon his property for the purpose of preventing the evils consequent on a state of popular ignorance, it would seem that he is justly entitled to expect that there shall be no culpable neglect in attempting to secure the full amount of the benefit contemplated. The parent is bound by a two-fold obligation—to his children and to the community—to see that the means of education provided at the public expense, be not neglected by his children. Each town and city is also bound to use all reasonable endeavors, through appropriate officers, to bring all the children living within its borders under the influence of the public schools. If it can be shown that children ought to be in the schools at all, the same arguments would prove that their attendance should be such as to accomplish, in the best manner, the object for which the schools are supported. If parents have no just right to withhold their children from the schools, much less have they a right to interfere with the progress of the children of others by the irregularity of the attendance of their own. If it be admitted that a pupil may attend school at just such times as he or his parent may choose, and is entitled to receive instruction accordingly, it will follow either that his class ought to be detained till his deficiency in the class exercises shall be made up, or that special instruction ought to be provided for him out of the class. But no one will pretend to such a right as this. Various expedients have been resorted to by different towns to diminish this irregularity of attendance. In some places it has been made the subject of public discussion, and the sentiment of the community has been so improved as to act very favorably upon the minds of parents. In others, a custom prevails, of publishing in the school report the names of those who have distinguished themselves for their regular

attendance. In many towns, rules have been established by the school committee, excluding from the school those whose absences exceed a certain amount. A still better method is that of degrading such pupils, by putting them into a lower class. Great success has, in several instances, attended the labors of persons appointed to look after absentees, to inquire into the causes of their absence, and to use proper means to bring them back to the schools. No doubt different courses will need to be pursued in different places. Mild and persuasive measures, if successful, will prove the best. In manufacturing towns and cities, something more may be required. A very important point will be gained if the public attention is so drawn to the subject as to lead to any course of action upon it.

DEFICIENCIES IN MORAL TRAINING.—In respect to the moral training of the young, there are still greater deficiencies than in their intellectual training. The causes of this are various. Too frequently the subject receives but little direct attention. It is looked upon as a purely incidental part of education, and is either neglected or treated in a desultory manner. This is the first error to be corrected. All the parties concerned in the management of the public schools, must, as has been already observed, come to view this subject in another light, and to regard the discipline of the schools in the light of its direct and vital connection with the public morals. Reference has already been made to the duty of the community at large, and of parents in particular. But when the public sentiment, parental influence, and the school supervision, are all as they should be, there will still remain a great work to be performed by the teacher. If he thinks lightly of this part of his duties, he is not worthy of his place. How far the ranks of the profession would be thinned, if all such incumbents were dismissed, it is not for us to say. But it is quite clear that the schools should never be committed to such hands. None ought to be selected for this responsible office but persons of moral earnestness, who themselves attach great importance to the subject of morals, and who give satisfactory evidence of it by the labor they bestow upon their own moral improvement. A person who does not actually make it his definite aim to study his own heart, to cultivate and strengthen all the pure and noble affections, to control his passions, and to subdue his inordinate appetites, cannot have that moral discipline, nor that knowledge of its means and processes, which is indispensable to the successful cultivation of the morals of the young.

COMMON MISTAKE IN THE DISCIPLINE OF CHILDREN.—The most common mistake in the discipline of children is that of judging their moral acts by the standard of our own minds. Many things which appear clearly wrong to a person of experience and mature reflection, do not appear so to a child. His feelings may readily respond to simple principles that are purely moral, so far as they are understood. But maxims which are the result of the experience and observation of centuries, though current in society, and identified in our minds with moral law, do not come to the uninstructed mind of a child with the same meaning or with the same authority as they do to ours. So it is with many of those rules which we have come to adopt from expediency. If we put all these upon the same footing with the simplest dictates of conscience, and suppose the child to understand them and feel their force as he does the latter, we do him great injustice. Discipline administered without regard to this distinction will often be founded on motives and feelings falsely attributed to the child, with an appeal to a sense of obligation which has, as yet, no existence in his mind. If, instead of judging his motives by a standard known only to adults, and making him feel an authority that seems to him purely arbitrary, we were to seize upon some moral sentiment within him, whose authority he understands and acknowledges, and to refer the act under consideration to that sentiment or principle, both parties would then be acting upon common ground, and the wrong reprehended by the one would be recognized and acknowledged by the other. Indeed, an individual act can be shown to be wrong, before a general maxim or abstract rule, applying to a large class of such acts, can be comprehended. That arbitrary procedure which makes one feel the terror of authority without feeling the force of moral obligation, often produces a deleterious effect by creating a keen sense of injustice.

FAILURE IN GOVERNMENT.—Without much observation and reflection, it is not to be expected that one can succeed in a work of such delicacy and complexity. In school discipline the facts of the case merely give the starting point. The inclinations which predispose one to such acts, the impulses which moved him to it, the law by which such inclinations and impulses can be checked, the effect of certain modes of treatment, the choice of the best means and the use of them in the proper time and manner—these are points on which the inexperienced teacher has not sufficiently reflected. He proceeds, at once, to handle weapons which he does not know how to use, and whether he do more harm than good is a mere matter of chance. An act done in a passion is punished in a passionate manner;

and the evil, instead of being remedied, is strengthened. Forgetting that the teacher's spirit begets its like in the pupil, he proceeds quite confidently to cast out devils by Beelzebub, the prince of the devils. He, by an injudicious threat, deprives himself of the liberty of using any of the means at his disposal except the particular one—not the best perhaps—to which he is committed. A skillful disciplinarian will have large resources. If one method does not succeed, he has another at hand; and instead of being embarrassed, he is clearer in his judgment as to what is needed than he was before. This fertility of expedients is the result of much thought, suggested generally by personal experience. The teacher has no right to undertake so delicate and responsible a task without much preparation and much thought. He must, indeed, begin without experience, but not without observation and reflection. If a young teacher would first become an assistant, and in that situation treasure up experience, under the guidance of another, it would prevent many of the failures which now occur. When inconsiderate persons have undertaken to teach without having studied the subject of school government, school committees could aid them by calling their attention early to the subject. Many a teacher could in this way be so prepared for an emergency as to be able to meet it without a total failure, and so be saved from the disgrace of an early dismissal. Though the teacher must reflect for himself, and have a personal knowledge of the principles to be acted on, he can be aided in his reflection by others. It is no uncommon thing for one who fails in government in the first school, to succeed well afterwards. The first furnishes materials for reflection, and compels one to study the nature of children, their temptations, their weakness, and their wants, and to learn by what means a wrong feeling may best be corrected, or a right feeling strengthened. And when once the teacher begins to reflect carefully, and to proceed upon settled principles and by sober calculation, there will soon be, with a person adapted to the profession, an approximation to the right way, that can not in the end fail of being successful.

HIGHEST SUCCESS IN GOVERNMENT.—There can be no true moral training, no formation of character on great and immutable principles, where nothing more is done than to enforce rules established for convenience. A child ought to be taught to regulate his actions by the will of God. In one respect the teacher and pupil ought to stand on a level with each other, both bowing to the will of their Maker, and performing their respective duties to each other out of regard to his authority. A school should be led to view itself as under the inspection of an All-seeing Witness, and each member to hold himself accountable to Him for the spirit and character of his deportment. Let these comprehensive principles be kept before the mind, and they will have a weight of authority which every one will feel. There will be a sense of obligation lying back of the teacher's rules, making it the easier for him to require of them the performance of their duties from the fact that both he and they together are accountable to a higher being. In this way the moral natures of children are called into action. The conscience has its part to act. A line is dropped which sounds the heart to its lowest depths. Character thus formed has strength and firmness. Its roots strike deep and spread in every direction, giving a vigorous growth to its trunk and waving branches, and holding them firmly in their true position. Such a method of treatment would prevent many of the collisions which will otherwise occur between the parties. It will place both upon higher ground, and render the one voluntarily subject to the other. While the latter acknowledges his obligation to be just and kind, and to govern according to the will of his Master in Heaven, the former will generally feel the equity and propriety of being held to the corresponding obligation of obedience and respect. So far as success attends discipline conducted on these principles, its influence will extend to all places and to all times. It will follow the pupil as he leaves the school room, and manifest itself in all his intercourse with others. His companions will be treated with kindness. Wrong and violence will be inflicted upon no one, even the most helpless. The rights of property will be regarded, though the possessor may be far away, and though there be no one at hand, either to restrain from evil conduct or to witness against it. The home will feel the power of such a school discipline. The habit of respect and prompt obedience to the teacher, and of affectionate and courteous intercourse with pupils, will manifest its power and influence in the presence of a parent, brother, or sister.

TEACHERS' INSTITUTES.—Eleven Teachers' Institutes were held during the year, with 1,372 members, or an average of 125 teachers to each Institute.

The Report of the Board of Education contains an Appendix full of valuable statistics, (a summary of which is given below, but which to be appreciated must be examined in detail,) and Reports of officers charged with the supervision of the schools. In no State are the defects of the schools more faithfully and fully dis-

cused and pointed out for public scrutiny and reprobation. We have room for only a few extracts from these reports.

SUMMARY OF STATISTICS.

Number of towns (not including three incorporated in 1855),	328
Number of towns that have made returns,	327
Number of Public Schools in the State,	4,215
Number of persons in the State between 5 and 15 years of age,	213,984
Number of scholars, of all ages, in all the Public Schools, in summer,	189,997
Number of scholars, of all ages, in all the Public Schools, in winter,	202,709
Average attendance in all the Public Schools in summer,	143,973
Average attendance in all the Public Schools in winter,	157,857
Number of children under five attending Public Schools,	15,601
Number of persons over fifteen attending Public Schools,	21,877
Number of teachers in summer—males, 375; females, 4,262; total,	4,637
Number of teachers in winter—males, 1,739; females, 3,071; total,	4,810
Number of different persons employed as teachers in the Public Schools, during the year,—males, 1,809; females, 5,325; total,	7,134
Average length of Public Schools, seven months and sixteen days.	
Average wages of male teachers per month, including board,	\$41.45
Average wages of female teachers per month, including board,	17.29
Amount of money raised by taxes for the support of Public Schools, including only the wages of teachers, board, and fuel,	\$1,137,407.76
Increase for the year,	123,935.50
Income of surplus revenue appropriated only for Public Schools,	9,491.67
Amount of voluntary contributions of board, fuel, &c.,	87,776.09
Income of local funds appropriated to schools,	84,460.59
Amount received by the towns of income of State School Fund,*	48,611.04
Capital of State School Fund,	1,625,932.30
Amount paid by the towns and cities for superintendence of Schools,	33,149.86
Aggregate returned as expended for wages, fuel, and superintendence,	1,266,436.42
Amount raised by taxes (including income of surplus revenue) for the education of each child in the State between five and fifteen, per child,	5.36
Number of towns that have raised the sum of \$3, or more, per child,	244
Number of towns that have raised the sum of \$4, or more, per child,	131
Number of towns that have raised the sum of \$5, or more, per child,	65
Number of towns that have raised the sum of \$6, or more, per child,	35
Number of towns that have raised the sum of \$10, or more, per child,	5
Number of incorporated academies returned,	71
Average number of scholars,	4,716
Aggregate paid for tuition,	\$82,496.10
Number of private schools and academies,	646
Estimated average attendance on private schools,	17,571
Estimated amount paid for tuition in private schools,	\$271,290.06
Amount annually expended to promote popular education in Massachusetts, exclusive of the cost of erecting and repairing school-houses, of providing school books, of appropriations by the legislature for Normal Schools, Teachers' Institutes, &c., and of the support of Collegiate, Professional and Charitable Institutions,	\$1,620,222.58
In addition to the above statistics of Public Schools, we glean the following items of expenditure for other educational and humane purposes for 1855.	
State Reform School for Boys at Westborough,	\$47,960
State Industrial School for Girls at Lancaster,	19,662
Education of the Blind at Perkins Asylum,	10,552
Education of the Deaf and Dumb at American Asylum,	8,000
Education of Idiots, (including \$25,000 for building,)	80,000
State Normal Schools,	16,000
State Scholarships in Colleges for High School teachers,	2,400
Expenses of Board of Education, Secretary and Assistant,	5,000
Expenses of Teachers' Institutes,	4,000
Expenses of Agents and Lecturers of Board of Education,	2,500
State and County Teachers' Association,	600
American Institute of Instruction,	300
State Board of Agriculture,	9,000
Agricultural Societies,	10,542
Eye and Ear Infirmary,	2,500
Support of Pauper Insane,	53,800
Support of Paupers and State Alms-Houses,	200,000
Agent for Discharged Convicts,	1,000

* The law requires each town and city to raise by tax at least \$1.50 for each child between the ages of 5 and 15, as the condition for receiving a share of the State School Fund.

Professor Alpheus Crosby, one of the Agents of the Board, reports:

PERFECTION NOT REACHED.—Massachusetts has so worthily acted her part as pioneer, not only in the first institution of free schools for all, but, more recently, in that reawakened interest and those signal improvements in our systems of public instruction, which one of the early principals of your Normal Schools has so happily termed, in a late address, the *revival of education*, that one would be glad to believe, if possible, that her schools were now without fault—the goal of perfection quite attained. But no one can be practically familiar with our common school system without the deep conviction that, however much may have been done, there still remains much to do; that the system, with its venerable foundation and recent improvements, has still many inequalities and irregularities of action, and many unharmonized details; and that its noble theory is not unfrequently degraded by the unworthy representation of a mean practice.

INEQUALITY OF EDUCATIONAL PRIVILEGES.—One of the most remarkable features in the educational aspect of Massachusetts consists in the striking contrasts presented by different towns (lying, perhaps, side by side, and closely akin in other respects) in the interest, zeal, liberality, wisdom, and efficiency, with which they manage their public schools. Almost all strangers, and most citizens, are so little aware of the extent of these contrasts, that they are almost sure either to over or undervalue the educational condition of the State, according as they take, for the basis of their estimate, a town of the higher or lower class.

LENGTH OF SCHOOLS.—In whatever other respects the State is advancing educationally, it certainly does not appear to be in the amount of schooling which it furnishes to its children. In the school abstracts for the years 1844-5, 1845-6, and 1846-7, the average length of the schools is given, for each year, as seven months and twenty-five days, while for each of the years 1853-4, and 1854-5, it is given as only seven months and sixteen days. As these months are only school months of four weeks each, it follows that the average of our school year can be but little more than thirty weeks, or not much above half of the calendar year.

CHOICE OF SCHOOL COMMITTEES.—This is too often influenced by other considerations besides the best welfare of the schools; as party spirit, sectarian jealousy or compromise, personal pique, love of change, weariness of hearing Aristides called the *just*, &c.

POOR SCHOOL-HOUSES.—How many wretched school-houses are there still in the Commonwealth, wretchedly contrived, wretchedly built, wretchedly furnished, wretchedly ventilated and warmed, wretchedly kept,—no, wretchedly neglected and abused, and themselves abundant sources of wretchedness! The condition in which many of our districts suffer their school-houses and school premises to remain year after year, is amazing,—abhorrent to every sentiment of propriety, taste, comfort, health, decency,—and would be quite incredible, were it not attested by the eyes, and other no less credible witnesses.

BOARDING ROUND.—This practice, while its advantages and disadvantages in other respects are perhaps nearly balanced, deprives the teacher of that quiet room, with the books and writing desk, which every teacher needs, and of that daily study and special preparation for the school exercises, without which no teacher can do his best, and converts the whole school season into a continuous period of visiting, with its various admixtures, in different cases, of feasting, parties, games, chit-chat, jokes, flirtations, and gossip.

CHOICE OF PRUDENTIAL COMMITTEES.—The custom is still extensively prevalent of appointing the citizens of the district to this office, mainly upon the principle of rotation, and then of leaving each one to keep the school machinery in motion his year without a district tax. He must take care, of course, that the old house does not fall down on his hands. If the boarding round system prevails, he is expected to furnish gratuitously an over-Sunday home to the teachers whom he employs, and a room where, through the week, they may keep their trunks and change their clothes; but then he is regarded as excusable if he employs such teachers as will be agreeable to his own family, some kinsman or kinswoman, it may be, or, perhaps, one of his own children.

And as, upon this system, the district meeting becomes a mere form, it is no wonder if no more attend it than are absolutely requisite to carry out the form, and these perhaps through the special solicitation of the clerk.

CHANGE OF TEACHERS.—The fittings of teachers from place to place, and their changes and interchanges of their scenes of labor, look, to one who can dart his eye over the field, like a rapidly played game. But how unfortunate a game to the pupils who are played upon, I need not remark.

From the Reports of the Town School Committees we might select extracts to show that, in the opinion of persons best qualified to judge from a personal knowledge of the facts, there are great evils and defects to be removed. We shall notice but one evil—one of the most prevalent and formidable evils in the practical workings of our public school systems.

TRUANCY, NON-ATTENDANCE.—One of the most perplexing difficulties which the committee have had to encounter during the past year, is that of truancy and non-attendance.

The vicinity of some of our school-houses is polluted by the presence of profane and vulgar boys, not only vile themselves, but exercising a most disastrous influence upon their less depraved associates. Efforts have been made to induce their return to the paths of virtue and decency, and in some cases with success. Where the conduct of the incorrigible has fallen under the cognizance of the law, the law has been enforced. But many cases municipal regulations do not reach. The question at present is, not so much what measures shall be taken to reclaim the vicious, as how shall we protect the innocent.—*Chelsea*.

How much of truancy there is among the scholars of our public schools we can not tell. But we fear there is no little. We fear that many very busy and very easy parents, think their children are at school while they are off playing in the streets, and perhaps in actual mischief.—*Bradford*.

The prevailing occupation of the people of this town renders the labor of children, especially male children, available at an early age; and offers a strong temptation to employ their hands to the impoverishment of their minds.—*Groveland*.

Your Committee can not refrain from again calling the attention of the town, to the irregularity of attendance of the pupils upon the schools.—*Ipswich*.

The Committee are constrained to believe, that the evils of irregular attendance of the pupils at the schools are not fully comprehended.—*Nahant*.

We are satisfied that the great irregularity of attendance is attributable mainly to inattention and inefficiency on the part of the parents, and until they are brought to see and feel the evil—the serious evil they are inflicting on their children—it will not be wholly removed.—*Saugus*.

There is in the community a great disregard of punctuality in the attendance of the scholars.—*Groton*.

The whole number of truants, 306. Of these, 292 were boys and fourteen were girls. Twenty-two of the boys were arrested by virtue of warrant; two of these were sent to the house of employment and reformation for juvenile offenders, for two years, three for one year, and four for six months; nine were bailed by parents or by friends, and for four employment was found. Whole number of absentees, (children not attending school and apparently out of employment,) 482. Of these, 371 were boys, and 111 were girls. Of the truants and absentees, 166 were American, and 620 were of foreign parentage. Of the absentees who were placed in schools, forty four had never attended school in this city.—*Lowell*.

The great irregularity of attendance at our public schools is an evil loudly demanding remedy.—*Malden*.

There is yet a lack of regularity and punctuality in the attendance of scholars at the different schools.—*Stoneham*.

An average absence of four or five daily and even of eleven in the instance of one district during the summer term, is a serious matter, and your Committee believe wholly unnecessary. The actual loss in the latter school amounted to the enormous aggregate of eight hundred and forty-seven days, or more than one-fourth of the whole term.—*Harvard*.

The highest average attendance in any of the schools is 90 per cent., while in some it is as low as 35 per cent.—*Northbridge*.

TEACHERS' ASSOCIATIONS. The sum of \$150 is paid annually to the State Teachers' Association, and the sum of \$50 to each County Teachers' Association, in aid of the expense of holding one or more annual meetings.

AMERICAN INSTITUTE OF INSTRUCTION. The State has paid annually, since 1835, the sum of \$300, in aid of the American Institute of Instruction.

MASSACHUSETTS TEACHER. A monthly periodical, now in the seventh volume, is published under the auspices of the State Teachers' Association, without any aid from the State.

MICHIGAN.

Annual Report of the Superintendent of Public Instruction, (Francis W. Shearman,) made to the Legislature for the year 1853. 215 pages.

We have not received a Report of the Public or Common Schools of Michigan later than that for 1853. This document contains the Annual Report of the Regents of the University; Report of the Board of Education, charged with the supervision of the State Normal School; Proceedings of the State Teachers' Association; and Annual Report of the Board of Education for the Public Schools of Detroit, with other valuable papers. As the Report of the Superintendent does not go into much detail respecting the working of the system of primary schools, we can make but few extracts.

SYSTEM OF TAXATION.—The system of taxation for the support of the primary schools is three-fold. It consists of a tax of two mills on each dollar of the valuation thereof, assessed by the supervisor upon the taxable property of the township; twenty-five dollars of which is appropriated to the purchase of books for the libraries, and the remainder is apportioned to the several school districts of the township for the support of the schools therein, and collected and returned in the same manner as State and county taxes; of a tax raised by vote at the annual school district meeting, not to exceed one dollar for every scholar in the district, between the ages of four and eighteen years, which tax is also returned to the supervisor, and levied, collected, and returned in the same manner as the township taxes are levied, collected and returned; thirdly, a rate bill made out by the director of the school district, against the person or persons sending children to the school, for the amount of tuition and fuel for which he is liable, collected by the assessor, if necessary, by distress and sale of goods and chattels, to make up any deficiency which may arise after the income of the primary school fund, and the funds arising from the sources of taxation above mentioned are exhausted, for the support of the schools.

STATISTICS.—The number of whole districts, as reported, is	2,186
The number of fractional districts, as reported, is	797
Whole number of districts from which reports have been received,	2,462
Number of children in each district, between 4 and 18, attending school,	131,355
Whole amount paid for teacher's wages,	\$125,063.62
Whole amount raised by the districts, for all purposes,	114,675.69
Amount paid for building school-houses,	55,536.69
Amount paid for repairs,	9,941.00
Amount raised by rate bill,	37,533.36
Amount of mill tax as reported,	80,009.91
District tax,	12,041.86
Amount of fines, penalties, &c.,	863.45
Number of volumes in township libraries,	100,161

We shall have occasion to refer to the University, the State Normal School, and the Public Schools of Detroit, in the progress of our work.

MISSISSIPPI AND MISSOURI.

We have no official or legislative reports relating to the public schools of Mississippi, or of Missouri, except the annual report of the Directors of the Schools of St. Louis, to which we have already called attention in No. 3, (Vol. I., p. 348.)

NEW HAMPSHIRE.

In the absence of the last Report of the Board of Education, composed of a member or commissioner of common schools for each of the ten counties of the State, we make a few extracts from the "*Report of the Commissioner (Jonathan Tenney,) for the county of Hillsborough, to the Secretary of the Board, dated Manchester, May, 1856.*" The report is a full, direct, practical document, and gives a better insight into the condition of the schools, and the working of the system, than a more general report.

TEACHERS' INSTITUTES.—The law obliges each town to raise by tax a sum sufficient to defray the expense of one or more Teachers' Institutes, held under the appointment of the commissioner of the county. We extract a few paragraphs from this part of Mr. Tenney's report.

During the year past, 487 members have attended the three Institutes of this county. This does not take into account many whose names are not registered because of their youth or brief attendance, nor does it mean the many school committees and citizens who are often times benefited quite as much as the teachers. In this attendance, undoubtedly, are the names of some who do not teach; of some, also, from other counties; not more, probably, than from this to other counties. Among these are most of our oldest and best teachers. Among them are about half of the teachers in our last winter schools, and probably two-thirds of those in our next summer schools. Of thirty towns in the county, *twenty-eight* were represented in these Institutes.

I have watched teachers who have attended Institutes as I have visited their schools, and I feel sure that I can tell them from those who are too conceited to improve, who are "wiser in their own conceit than seven men who can render a reason." Institute teachers are sought for by judicious committees now; they are shedding light that cannot be concealed.

Institutes cannot give book learning, common sense, nor aptness to teach, any more than the best of school teachers can supply to mind the deficiencies of nature. But whatever of good qualities for teaching exist in any one, may be vastly quickened and developed by proper attendance upon any Institute of tolerable regulation and instruction.

Certain it is, with all their faults, Institutes have done more than any other agency ever did, to elevate our school teachers, and divest our schools of many of the barbarian notions and habits, that, ten or fifteen years ago, were common in them. This, no observing, reflecting man will deny. Nor is the day of their usefulness past. They are improving. Men of practical judgment; men of large and successful experience; men acquainted with the history of education and the most approved modes of reaching mind and developing its faculties, men who have been born and nurtured, or have long labored in our midst, are beginning to be sought for to guide and instruct in them.

COMMISSIONER'S VISITS TO THE SCHOOLS.—The law requires the Commissioner to spend at least one day in each town in his county.

In my circuit I visited 127 schools, taught by 152 teachers and numbering 5,616 pupils. This is an average of more than four schools and five teachers to each town, and, if I mistake not, exceeds, in this respect, the labors of any of my predecessors in office. Besides these I have gathered by "inquiries and other means," pretty full and reliable information of the character of most of the remaining teachers of the county and the condition of their school-houses and schools.

In my visits my plan has been to ascertain—1. The general condition of the school-house, with its yard and appurtenances. 2. The adaptedness of the size of its rooms, its warming and ventilating and cleansing apparatus, and its seats, desks, and other furniture, to its appropriate objects. 3. Its supply of maps, charts, black-boards, and other illustrative apparatus. 4. The studies, classification and text books of the school. 5. The discipline of the school as manifested in the look, tone and movement of teachers and pupils in relation to each other and the visitors present. 6. The character of the teacher as a teacher, as exhibited in conducting class exercises. 7. The habits of study and thought of the pupils. To ascertain this was deemed of more importance than to ascertain how far in the text book each one had been, or what studies each one was pursuing. Teachers were always desired to conduct the exercises in my presence, and present their best samples of scholarship. I, usually, asked a few questions, more to test the pupil's habit of thinking and study than to ascertain his real knowledge; and often added a few remarks with illustrations according to my own sense of duty, calculated in my judgment, to change the monotony of common examinations, to break up the old humdrum modes of saying and hearing lessons, and suggest to teacher and pupil a course tending to awaken thought and develop practical knowledge.

I held evening meetings and addressed the citizens in every place save Manchester, Milford, Merrimack and Weare. The estimated aggregate of my twenty-six audiences, is about six thousand.

Among the subjects presented were—Hindrances to the Teacher's success—Origin and Progress of Education in New England—Character and influence of New Hampshire mind, and the necessity of sustaining our good name by increased attention to home and school culture—Economy of public schools—Practical edu-

education—District system—Graded schools—Relations of Prudential and Superintending Committees—School supervision—The demand for better teachers—Influence of home training in our schools—Duties of parents to the teachers of their children—Teachers' Institutes—State Normal School—Text Books—How best to class, teach and govern a school—The demand for central High Schools of a higher grade in every town, and their economy—School architecture—School apparatus. In presenting my views upon these topics, I have aimed at no display of oratory, but have spoken right on, what I deeply felt to be true, with the freedom of conversation among friends, endeavoring to urge arguments based on considerations of the highest self interest and the most sacred obligations of every one to his God, his country and posterity..

DISTRICT SYSTEM.—This is one of the inherited evils pertaining to our school system. It has been carried to an extreme probably never dreamed of by its originators. Most of our towns have, at least, twice as many districts as are needed. My opinion is, that all district lines should be abolished, and that all the school property should be owned and managed by the town, under the direction of a suitable committee; that school-houses should be located and built sufficient to accommodate the children of the town, at the rate of from thirty to fifty to each school-room; and that attendance should be directed by the school committee.

SMALL SCHOOLS.—These come from the district system. There are nearly ninety districts in the county having an attendance of less than twenty pupils; many of less than ten; most of less than thirty; only about sixty of forty and more. In one district of three pupils, about \$80 were spent for schools in one winter. As our school money is frequently divided, the scholars in the smaller districts may get from \$10 to \$35 each, annually, while in the larger districts, less than \$1 is the average amount of school money to each pupil.

LENGTH OF SCHOOLS.—Very rarely have our rural districts more than twenty weeks of school each year; in many of them not more than twelve; some not more than six or eight. Now, these may be better than nothing, if kept several seasons by the same good teacher. As now managed, many of them are of but little value to the intellectual and moral natures of the young, especially as they are usually kept by *cheap* teachers in very *cheap* school-houses.

CHANGE OF TEACHERS.—The young mind needs to be cared for and educated by those who understand its powers, its motives, its tendencies, its peculiarities. How can these be known by the teacher who comes to take direction of the child, a stranger; leaves at the end of a few weeks, just as he begins to understand his trust and his duties, and leaves, never to return again, for another to follow him in the same blind and erring course. Yet, this is the usual way in our public schools.

FEMALE TEACHERS.—They are now, more than formerly, intrusted with the management of youth of more maturity in our winter schools; and this, in most cases, with equal success. Economy first led to the trial; and now six to one of the teachers of our schools are females, a majority of our winter sessions being committed to them, and, as aforetime, nearly all the summer. The big boy, of rude manners, is tamed by the magic skill of the mistress more than by the stern command and uplifted rod of the master. The school-master has learned a lesson from his "better half," in government as well as in teaching. This is well; and, as the experiment succeeds so well, it should now pass into a habit, to employ females of proper age and power, in most of our winter schools, not only because they can be obtained for less wages, but because they are more likely to be successful.

PARENTAL VISITS.—We find more of these than formerly. Yet they are "few and far between" in most towns. But here is a great fault—I think the greatest radical fault—the cause of bad houses, bad teachers and bad scholars—that parents and citizens do not exhibit that all-pervading, deep and abiding interest in the practical working of their schools, as they do in those things of minor importance—their farms, their merchandise and their other common affairs.

HOME INFLUENCE.—Very foolish is the parent who has failed to govern his few children who have been with him daily from infancy, and expects the teacher, a stranger, to manage many with unerring skill and perfect success. Parents must govern well at home, if they would find no trouble in school; and, if they fail, they will do well to look upon teachers with charity. Very rare it is for children well trained at home to have trouble in school.

SUPERINTENDING COMMITTEES.—The plan of appointing only one man in each town to this office is rapidly gaining ground, and gives general satisfaction. Twenty-two out of thirty towns had only one man in this office last year. This

one man has a unity in his plans; he knows what he has to do; he knows when it is done. The great difficulty is to find that one man every way fitted, willing to take the office, perform its duties and incur the odium often arising from a rigid fidelity, for the meager compensation allowed.

PRUDENTIAL COMMITTEES.—This office ought to be abolished, as not only useless, but mischievous, on the whole, in its effects on our schools. Those who hold it are, more frequently than otherwise, unfitted to judge of the proper wants of the school. It is often looked upon as a burden which each member of the district is to share in turn. Sometimes the *turn* comes to a man worthy of the trust; while most use it to put some friend into the school as a teacher, without regard to fitness, and then leave all other matters to destiny, except that of *economy*, which is supposed to consist of saving as much money as possible from good teachers and comfortable school-rooms, and spending it in hiring a cheap teacher, and prolonging the dreary and profitless days of the school, at least as long as usual. How much better it would be to intrust prudential affairs with the same man who has the general superintendence of schools. Then there would be no unpleasant difference of views between these two functionaries. Teachers would be examined independently, and those adapted to the wants of each school selected from the best; the houses would be properly repaired and furnished in a manner to afford some equality of treatment in all the schools in town; there would be no neglect of notice in beginning and closing schools. These and many other considerations point to the necessity of a reform in this matter of dividing duties upon a matter in which there should be greatest harmony.

SCHOOL-HOUSES.—The pupils and teachers of our winter schools suffer more than can be told or even known, from want of proper heating and ventilating arrangements. Most suffer from too much heat, especially those who sit near the stove, or under the huge funnel of a low room. The head, which ought not to be heated, while the feet which ought to be very warm, often suffer from cold. No other ventilators were needed when the old and capacious fire places were in use; but now they are quite as needful as stoves. Nor do cracks in the walls or ceiling answer the purpose, admitting fresh cold air upon those exposed to its sickle currents. If the story of sick rooms and graveyards could all be told, there would be sad associations about the heated and poisoned air and the chilling currents of school-rooms. More children die every winter from this cause than from all the "catching diseases" of our climate. Will parents who love their children see to these things?

WANT OF GRADED SCHOOLS.—What can even the best teacher do with from fifteen to thirty classes in a day upon various subjects, and composed of pupils of various ages, powers and attainments? And this, to say nothing of governing and other duties. I find few district schools with less than the former number; a few with more than the latter. In such schools there can be no discreet government; no thorough teaching.

We have as yet, no town Grammar or High Schools. Certain districts have them, the privileges of which are sometimes shared by advanced pupils from other districts. These schools ought to be made common, in property, expense and advantages, to the whole town or city.

PRIVATE SCHOOLS.—Private select schools are very common in our villages, particularly in the autumn. These are generally established by persons in immediate want of funds, of no particular interest in the school or the people beyond the term of school, and with no peculiar fitness for their position. They are without special supervision or accountability. While some are very useful, and all may be more or less so, in awakening a desire for further pursuit of knowledge, there is much time wasted in beginning and closing one short term kept by a stranger, and little done that can be well defined. How much better to have the money, spent upon such schools, expended upon schools under public direction and inspection, taught by some well known, devoted, successful man, himself, perhaps, a citizen, employed year after year, so far as the money raised will allow. The liberal patronage bestowed upon these schools, as faulty as they are known to be, indicates the public demand for more school education than the public schools afford.

We do not object to permanent Private Schools managed by professional teachers of discipline, knowledge and skill. They often possess peculiar advantages, and will always be patronized by certain whose wants they are designed to meet. But we do think that these ephemeral select schools should give place, at once, to better public schools.

With a proper district system and due regard to grade of pupils, the requisite central High Schools, securing to the children of the town advantages as good as

can be found in most Academies, could be established and sustained annually from twelve to forty weeks, in every town of 600 inhabitants, at an expense not exceeding what the public schools now cost together with the expenses paid in academies and select schools.

ACADEMIES.—There are several institutions of this kind in this county, kept in operation all the year, under men of learning and worth, deservedly enjoying public confidence. Some of them have long shed a light over a wider space than our thirty towns; they have done much toward furnishing good teachers and good men and women in every position of honor and usefulness. They deserve honorable mention in a report upon public schools. Their Principals are among my best counselors, my helpers, my friends. I am not ungrateful; and may the public not be ungrateful to them.

Since the foregoing extracts were in type we have received a copy of the "*Tenth Annual Report upon the Common Schools of New Hampshire; the same being the Sixth Annual Report of the Board of Education, submitted June, 1856.*" 440 pages. This voluminous document contains the organization of the Board for 1855-56; Report of the Board of Education to the Legislature; Reports of the County Commissioners of Common Schools to the Board; Abstract of the Town Superintending School Committees' Reports; List of Town Superintendents; Catalogue of Apparatus for Public Schools; Books of Reference, for Teachers and Schools; Tabular view of the condition of the Schools in each town, and Summary for the State. From this document (and its value would be greatly enhanced by a full Index,) a clear insight can be obtained into the actual working and results of the common schools of the State, the district organization of the schools, the condition of the school-houses, the qualification of teachers, the text books and apparatus, public and parental interest, and the agencies at work in supervision and improvement. The Report of the Commissioner for Hillsborough county, (Mr. Tenney,) from which extracts are already given, is a good specimen of the plain and practical way in which the subjects are handled, and reflects both the dark and bright side of the system. The report of the town superintending school committee, in connection with the statistics from the same town, discloses the excellencies and defects of the schools with an accuracy and fullness, which could only be obtained by actual inspection. We make the following extracts from the proceedings of the Board and the Report of the Secretary.

TEACHERS' INSTITUTES. That the number of instructors at each Institute be reduced so as to give less expense, more time, more unity, more efficiency; that the sessions be made, as nearly as possible, model schools; that the instructions be chiefly elementary and practical; that, as much as possible, the members be submitted to examination and drill, and required to aid in the work; that the best teachers of our own State, so far as possible, be drawn out into the service of managing and teaching departments in the Institutes; that the sessions be held with special reference to the demands of common schools in respect to time and mode of operation.

No State in the Union makes such liberal provision for Teachers' Institutes. In 1855, the sum of \$5,250 was raised by tax by the several towns for this object, and twenty-two Institutes were held with an aggregate attendance of 2,353 teachers. The Secretary remarks:

The testimony of intelligent and observing School Committees everywhere is that the most constant and faithful attendants upon the Institutes are, other things being equal, the most devoted and best qualified teachers. The demand for *Institute* teachers is increasing; and, as they are the best, of course, they command the best wages. Very soon, none will be employed except such as have shown sufficient interest in their work to make the small sacrifice of time and money necessary to secure these cheap advantages—the best the State affords.

No claim is made that these Institutes can make good teachers out of the ignorant, the weak-minded, the perverse, or the vicious. Previous knowledge and discipline, proper strength of mind, good sense, and native aptness and love for the duties of teaching and directing other minds, must be had or they will not be attained here. Their object is to further develop, direct and strengthen the native

and acquired abilities; to review rapidly, the subjects commonly taught; to open the avenues to more attainment; to suggest improvements in the art; to awaken new zeal in the work; to inspire to higher endeavors. Hence, their benefit is not confined to the inexperienced teacher; but they are useful to all who are not too old or too wise in their own conceits to learn. Their didactics and drill are like a brief Normal School; their discussions and criticisms like those of an association of men of any vocation; their lectures inspiring like those of political, literary, or other conventions. American in their origin, they are adapted to American mind, and may be discontinued when the genius of our people ceases to demand associate effort, with all its quickening and powerful influences; when political caucuses, trade associations, and literary, social, charitable and religious conventions are needed no more.

CIRCUITS OF COUNTY COMMISSIONER. That the circuits commence as early as practicable after the opening of the winter schools; that the schools visited be at the option of School Committees; that measures be taken, either in visiting the schools or in School Conventions, to meet the parents together with the teachers and pupils; that the evening exercises, while they may be varied according to circumstances, should have special reference to the local condition of education in each town, and consist largely of free, practical discussions; that more time be spent in each place, if practicable, than the law requires; and that the results of the visits be made public through the county papers.

SCHOOL-HOUSES. That while we are pleased to see, in many places, evidence of increasing intelligence, humanity and liberality, in the proper construction, ventilation, warming and furnishing of school-houses, there be more earnest heed to these matters so vital to public good; and that attention be given to the reducing the number of school districts so as to afford larger means for securing these.

SCHOOL MORALS. It is recommended to parents, teachers and committees more vigilance in eradicating the ruinous habits of whispering and other communications among pupils; the use of obscene and profane language, and the vulgar rudeness of manners so common in school intercourse, often rendering the public school so objectionable to all discreet parents; also, the great evil of irregular attendance and tardiness, so destructive to good order, and detrimental to improvement.

SCHOOL INSTRUCTION. It is recommended to teachers to pay more attention to the *elements* of science; more thoroughness in drilling their pupils; more endeavors to ascertain and use the most approved modes of teaching; and more system in the communication of knowledge, accompanied with abundant and varied practical examples, drawn not from text-books alone, but from daily observation and experience.

SUBJECTS OF INSTRUCTION. 1. Moral Principles, Duties and Practices. 2. Physical Laws and Habits. 3. History and Geography of our own Country, and especially of our own State. 4. The Constitutions, Principles and Fundamental Laws of our own National and State Governments. 5. The proper speaking and writing of the English Language. 6. Practical Business Modes and Forms. 7. The Elements of Drawing. 8. The Elements of Natural Science, as seen and illustrated in the ordinary scenes and operations of nature around us. 9. Facts and Reasons about Common Things,—all to be taught orally or from text-books, in classes or general exercises, as the condition and wants of the school may seem to demand.

STATE NORMAL SCHOOL. A plan for a State Normal School was approved and urged on the attention of the Legislature.

STATE TEACHERS' ASSOCIATION. In June, 1864, a State Association of Teachers was formed at Concord, and duly incorporated by the legislature of that year. It has since held regular meetings, twice each year, with much interest and profit to its members and the friends of education who have been present. Many of the most eminent and permanent teachers of the State are its members, while it is open to all actual teachers of every class. It is hoped that it will soon embrace every live teacher of the State as an active member. It can not fail, if properly sustained, to be productive of the most happy results to the teachers themselves, and to the cause of learning in the State.

If branch associations could be organized in every county in the State, and in every town where it is practicable, embracing not only the teachers, but school committees, and other active friends of education, the results would be most happy.

SCHOOL JOURNAL. It does seem as though interests so universal and important should have an organ through which their special agents and most active friends

could find ready communication. It might be under the joint control of the Board of Education and the State Teachers' Association.

SCHOOL LIBRARIES. The benefits of a well-selected school library in every school-room in the State surpass computation. The good books in them would be useful for reference not only during the sessions of school, but would keep many from idleness and vice, from sorrow and despair, when no other but these silent and impressive monitors and teachers were present. They would admonish and teach our youth and bless our homes the whole year. They would banish from our State the hurtful literature so cheaply and abundantly furnished, with tempting pictures, at every corner. If our youth are taught to read, they will read something. If parents do not see that reading, in cheap form, is thrown in their way, bad men will. These good books would form a correct taste for reading which could not afterwards well be perverted, leading to habits of inquiry which must result in better citizenship, greater wealth, and a happier state of society. The quickening, conservative and elevating influence of such a library in every town can require no argument. I consider such a library next in importance only to the good teacher; and the claim of the people upon the State for aid in establishing and sustaining such a library is based upon the same grounds and encouraged by the same wise policy.

SCHOOL REGISTERS AND BLANKS. Under a vote of the Board the Secretary prepared a Register to be kept by the Teacher, together with a set of Blanks for facilitating the operations of the County Commissioners, and School Committees.

SUMMARY OF SCHOOL RETURNS. Number of towns in the State,	228
Number of towns reported,	226
Number of school districts reported,	2276
Number of different scholars over four years of age attending public schools	
not less than two weeks,	85,508
Number of different scholars attending summer schools,	58,308
Number of different scholars attending winter schools,	67,108
Average number of different scholars attending school each term,	62,658
Average attendance in summer,	48,712
Average attendance in winter,	55,970
Average attendance during the year,	52,841
Per centage attendance in summer,83
Per centage attendance in winter,82
Per centage attendance during the year,825
Ratio of average attendance to the whole number of different scholars reported,61
Children between four and fourteen years not attending school,	2,707
Persons between fourteen and twenty-one who can neither read or write,	1,008
Average length of summer schools in weeks,	9.77
Average length of winter schools in weeks,	10.63
Average length of schools for the year,	20.40
Average wages of male teachers per month, exclusive of board,	\$18.45
Average wages of female teachers per month, exclusive of board,	\$8.42
Number of male teachers employed during the year,	1,077
Number of female teachers employed during the year,	8,042
Whole number of teachers employed during the year,	4,119
Teachers reported to have attended Teachers' Institutes,	1,591
Teachers reported as residents of the town in which they teach,	2,020
School-houses built during the year,	49
Incorporated academies and private schools reported,	89
Amount paid for building and repairing school-houses,	\$60,837.52
Amount paid for tuition in academies and private schools,	\$29,670.96
Amount contributed in board, fuel, &c., for public schools,	\$14,268.81
Amount of income from local funds for public schools,	\$8,814.56
Amount of income from surplus revenue for public schools,	\$1,815.32
Amount of income from railroad tax for public schools,	\$3,894.48
Amount of income from bank tax or literary fund,	\$18,138.58
Amount raised by taxes for support of schools,	\$212,846.17
Amount raised for Teachers' Institutes in 1866-6,	\$5,250.00
Amount required to be raised by taxes for schools in 1866-7,	\$200,000.00
Amount required to be raised for Teachers' Institutes in 1866-7,	6,000.00
Average amount expended for each scholar,	\$2.57
Whole amount expended for education in the State, not including the expenses for building and repairing school-houses, tuition in private schools, academies, colleges, school committees' services, Teachers' Institutes, and of the Board of Education,	\$258,777.76

NEW JERSEY.

Annual Report of the State Superintendent [John H. Phillips,] of Public Schools of New Jersey, for 1855. Submitted January 7, 1856. 181 pages.

This document embraces the Report of the Superintendent, Tabular Abstracts of the Returns made by Township Committees, Extracts from the Reports of Town Superintendents, and Reports of Teachers' Institutes.

STATISTICS. The Superintendent presents the following statistical summary of the operation of the system for 1855.

Population in 1855,	000,000
Whole number of towns and cities,	198
Number which have made reports,	167
Number of school districts,	1,429
Number of children between the ages of five and eighteen years,	173,014
Number of children who attended school through the year,	29,110
Number of children who attended nine and less than twelve months,	27,655
Number of children who have attended six and less than nine months,	27,305
Number of children who have attended three and less than six months,	29,307
Number of children over eighteen years of age who attended school,	1,646
Whole number of children who attended public schools,	114,923
Amount of money raised by tax for support of schools,	\$258,158.30
Amount of money raised by tax for building school-houses,	90,439.67
Amount of State appropriation,	\$80,000.00
Amount from other sources,	46,570.87
Total amount expended on public schools in 1855,	\$475,168.64
Increase on amount expended in 1854,	86,596.78
Number of teachers—males, 1,111; females, 719; total,	1,830
Salary of teachers per year—male,	\$355.00
Salary of teachers per year—female,	216.00

PROGRESS OF PUBLIC SCHOOLS. Never was there a time when so many capable and faithful teachers were in the field; never a time when the people appreciated so highly the importance and value of general education; never a time when they were so well prepared for liberal and enlightened legislative action on the subject.

STATE NORMAL SCHOOL. At the last session of the legislature, an act was passed "establishing a State Normal School for the training and education of teachers," a board of trustees was appointed to manage the affairs of the institution, and the sum of ten thousand dollars annually, for five years, was appropriated to its support.

By that act, no provision was made for the purchase of a site for the institution, or the erection of the buildings necessary for the accommodation of the school, but, as if to test the value of such legislation by a direct appeal to the people in their estimate of its importance to promote the cause of common school education, left it for them to supply, by their own voluntary action, the means for which no provision had been made by the legislature.

TEACHERS' INSTITUTES. Fourteen institutes were held during the year, with an aggregate attendance of 566 teachers. Visible improvement is observed in the teachers who have attended them, and there is no doubt, the instruction there received, has served to diffuse among them, a high degree of mental activity and professional feeling, and what is of equal importance, a spirit of improvement, as well as more enlarged and liberal views, as to the value and importance of general education, have, through this medium, been diffused among the people, that cannot fail to be productive of highly favorable results, in promoting the cause of education.

WEBSTER'S UNABRIDGED DICTIONARY. The liberality of the legislature in furnishing a copy for each school is highly approved, and there is no doubt it will benefit the schools.

REPORTS OF TOWN SUPERINTENDENTS. These reports speak favorably of the progress of the system, but abound in the usual complaints of poor houses, non and irregular attendance of pupils, &c. &c.

NEW YORK.

Annual Report of Superintendent of Public Instruction, [Victor M. Rice,] Dec 31, 1855. 159 pages.

This document discusses ably and practically the working of the system rather than the condition of the schools themselves, except as the latter may be inferred from the former.

STATISTICS FOR 1854-55. The school statistics are on a scale of magnitude which make it difficult to grapple with them understandingly.

Population of the State in 1855,	3,470,069
Valuation of real and personal estate,	\$1,361,326,946.00
Number of children between four and twenty-one,	1,224,137
Number of school districts,	11,748
Number of school-houses,	11,028
Number of children returned as taught in public schools,	900,000
Number of children returned as taught in private schools,	53,964
Number of children returned as taught in thirty-eight "colored schools,"	5,248
Number of children returned as taught in academies, colleges, &c.,	88,784
Number of pupils who attended public schools the entire year,	18,925
Number of pupils who attended public schools 10 months,	44,618
Number of pupils who attended public schools between 8 and 10 months,	66,246
Number of pupils who attended public schools between 6 and 8 months,	181,116
Number of pupils who attended public schools between 4 and 6 months,	180,966
Number of pupils who attended public schools between 2 and 4 months,	219,151
Number of pupils who attended public schools less than 2 months,	210,500
Number of volumes in district libraries,	1,505,370
Amount raised and appropriated by State,	\$800,000.00
Amount of income from common school funds,	\$145,000.00
Amount of income from United States deposit funds,	\$165,000.00
Aggregate amount of money distributed by State,	\$1,113,000.00
Amount raised by tax for teachers' wages in city, village, and union free schools,	\$691,687.94
Amount raised by rate bills,	\$382,359.08
Amount raised by tax for exemptions from rate bills,	\$41,948.16
Amount raised by tax for teachers' wages in colored schools,	\$2,893.25
Amount raised by tax for school-houses, sites, repairs, &c., fuel, &c.,	110,802.45
Whole number of different teachers employed,	18,731

INACCURACY OF SCHOOL RETURNS. The experience of the past year has produced the conviction that the abstracts of the county clerks are so unreliable, as to be worthless without corrections, which require about the same time and labor as would be necessary to make them originally from the returns of the town superintendents.

THE STATE SCHOOL TAX. The policy of devoting a portion of the public means to secure the universal education of the people has long since ceased to be debatable in this State. Upon the lowest considerations of sheer economy the state can not afford to have its children grow up in ignorance. Their effectiveness as producers of wealth, as workers in any department of industry depends principally upon their intelligence. The comparatively high degree of intelligence existing among our people is the circumstance which enables our artisans and manufacturers to maintain high wages and yet produce at a cheaper cost than the laborers of Europe, whose remuneration only suffices for a pinched and scanty subsistence—the defect of special training being more than supplied by general education. It is very obvious that what is the private interest of each individual is also the general interest of the community. It is less obvious, but no less true that no man can afford to have his neighbor ignorant and poor any more than he can afford to have him infectiously diseased or criminally vicious. The increase of private wealth is only consistent with that of the general stock, from which, through whatsoever transformation and exchanges, it must be derived. We are thus brought to the proposition recognized in our practice, that each individual is interested in the effectiveness of the industry of all his fellow citizens, and consequently in their education, in proportion to his stake in the aggregate wealth.

The central idea of republican government is that it subordinates property to mankind, protecting and administering material capital for the sake and in the interest of man, not managing men for the sake of capital. The state fails to fulfill its obligations to the child, when it permits the parent, for any selfish or merely

personal object, to rob him of the years which nature has appointed for bodily and spiritual development, for the gathering and not for the expending of mental and physical strength. It fails equally, when it neglects to furnish the means and appliances without which the child's own property, in the time of his adolescence, would be rescued in vain from confiscation to the immediate profit of his parent, and lapse unfruitful of any acquisition for future benefit to himself, to the state he is to serve in his maturity, and the children with whom, he in his turn, is to replenish its forces.

The act of 1851, authorizing a tax of \$800,000 for the support of schools, embodied two propositions:

1st. That the money should be raised by the contributions of every citizen in proportion to his property and irrespective of his location.

2d. That it should be distributed and expended in the various districts of the state, in proportion to the result to be accomplished therein, that is, to the number of children of the age deemed suitable for primary instruction.

It surely could not be deemed advisable to return to each county the amount raised by its own taxation to be devoted exclusively to its own schools. This, instead of aiding, as does the present plan, to make us a homogeneous people, by increasing the resources of the sparsely populated regions, where education is comparatively expensive, the necessity for it greatest, and the private means of the inhabitants the least, would tend to exaggerate the disparity already sufficiently striking between the highly civilized and the comparatively rude districts. It is the interest of the State that education should be most facilitated in those districts where it is of most difficult attainment, those in which a scattered population collects a few children in a school-house, remote from the habitations of most of them, to be reached by clambering over mountains and skirting swamps, through the snow-encumbered paths of winter. In such districts the lands are of small value, and the taxable property of little amount. The toil of earning a subsistence absorbs more of the time and thought, than in the more cultivated and settled districts, and the inclination to devote their hard-earned means to the instruction of the rising generation, dwindles into even smaller proportions than the ability. It is precisely in such regions that the inclination must be stimulated by pecuniary encouragement, or we must be content to see a race grow up inferior in knowledge, in morals, and value as productive agents to their fellow citizens, and distinctions of intelligence and character established within our State.

The tax, being founded upon a recognized necessity, should vary with the needs it is intended to supply. These are directly appreciable by an enumeration of the children to be instructed, and the ability to pay by the assessed valuation of the property. Any fixed sum is adapted to the circumstances only of a stationary State. Former superintendents have recommended that a tax of one mill upon the dollar should be levied instead of the present amount. A tax of three-quarters of a mill would raise upon the present valuation, a little over one million of dollars, the excess above the present tax being something less than half the sum for which provision was made by rate bills during the past year, and which was raised to supply those forbidding attendants upon rate bills, deficiencies caused by inability to collect them and exemptions which involve a painful conflict between the honest pride of the indigent parent and the needs of his family for physical comfort made more humiliating by the narrow spirit, in which exemptions are often refused.

UNION FREE SCHOOLS. It is believed that the policy of conferring upon the inhabitants of school districts the power to devote their own resources to the support of entirely free schools—of encouraging the consolidation of contiguous districts, and thereby promoting the economy and efficiency of the schools—of permitting the union of an academical with the primary departments, and thereby facilitating the classification of pupils and preventing those who are able to pay for their education in the more advanced studies from being withdrawn from the public schools to private establishments—is a policy so eminently wise and beneficial, that the legislature will not permit it to fail for want of the few amendments necessary to render the interpretation of the statute clear, and its administration easy and confident.

SCHOOL LAWS SHOULD BE SIMPLE. It should never be forgotten that its administration is devolved upon persons destitute, for the most part, of legal knowledge; bound under penalty to accept and serve in their offices without remuneration; remote, in many cases, from opportunities for legal advice, or the consultation of the statutes, and unprovided with the means of paying for legal assistance. Public agents thus circumstanced should at least be furnished with the most perspicuous and copious statutory directions that can be framed with the lights derived from a knowledge of the questions that are found in actual experience to prove most perplexing. The legislature should not content itself with furnishing

a code which courts and lawyers may be able to construe intelligibly; but should make it level to the comprehension of the wayfaring man, by the actual enumeration and definition of all those secondary and consequential powers and duties which might, in ordinary cases, be safely left to the influence of the enlightened reader. The question is not, can the statute be understood, but is it understood in point of fact, by those who are obliged to act upon their own understanding of its provisions.

EDUCATION OF TEACHERS. The agencies now in operation for his education are the State Normal School, teachers' departments in the academies, and teachers' institutes.

STATE NORMAL SCHOOL. In a state like New York, comprising an extended territory, and a population of nearly three and a half millions, including above one million of children of proper school age, more than nine hundred thousand of whom actually attend the schools, it could not have been rationally expected that one such institution could supply the demand for teachers. Still, it is but just to say, that it has been, and is fulfilling a mission of usefulness, though perhaps not always appreciated, in every county and town in the State.

It has created among the people a more exalted ideal of the proper qualifications of the teacher. Its pupils have gone forth from its halls, in the full consciousness of their responsible duties, and with a comparatively clear understanding of the means requisite to their faithful performance. They have co-operated with others who are eminent as educators in establishing teachers' associations and institutes, by which their own knowledge and skill have been diffused generally among the members of their profession. Some of them are now acting as school officers, and their influence in encouraging the establishment of a higher and better grade of common schools, is a matter of general notoriety among those who have watched with solicitude the educational interests of this State.

Under authority of an act of the legislature, passed March 30, 1849, and confirmed by subsequent acts of appropriation, academies have been designated biennially by the Board of Regents, for the instruction of classes in the theory and practice of teaching. It is known that by many of these institutions, the graduates of the Normal School are employed to teach these classes, and it is believed that they are generally better qualified for the business than those who have been educated under the system of instruction generally adopted and pursued in the colleges. Whether in the academies, in the common schools, in teachers' institutes or in the performance of their duties as school officers, they become, emphatically, the teachers of teachers, to whom they impart a knowledge of the discipline and instruction which they themselves acquire at the parent school. Its influence has thus been and will continue to be extended to a great multitude of children and youth, who will seek knowledge with method and earnestness of purpose, and whose well-ordered lives will be the highest approval of a policy, having in view the preparation of the teacher for his trust.

This institution has been in operation eleven years, in which time it has instructed, for a longer or shorter period, 4,796 pupils, of whom 859 have completed the full course of studies and practice prescribed, and received diplomas. There is a very pressing demand for teachers from it, so much so that a large number of the young men who were under its tuition at the commencement of the present term have been induced to leave for the purpose of teaching during the winter. Some of these young men will probably return, but others, with their present acquirments, will find continuous employment at a fair compensation.

TWO NORMAL SCHOOLS NEEDED. It is urged that one such institution could not have been expected to meet the demand for teachers in a State supporting more than twelve thousand schools; that if there were doubts twelve years since as to the benefits of instruction in didactics, those doubts do not now exist; that the reasons for the support of one may be urged with equal force in favor of others; that there are hundreds of worthy and competent young men and women who would gladly participate in the privileges of the existing school, were they able to bear the necessary expenses, and the parents of others, in remote parts of the State, object to their attending school so far from their homes; that the number in attendance at the Normal School is now as large as its facilities for instruction will warrant.

TEACHERS' DEPARTMENTS IN ACADEMIES. From 1850 to 1855, a "Teachers' Class" has been taught in a certain number of academies designated by the Regents, for at least one-third of each academic year, or for four months. The whole number taught in these classes for six years is 8,944, at an expense of \$30,920, averaging over ten dollars each for one term of instruction of about four-

ten weeks. By an act passed April 13, 1855, the legislature appropriated \$18,000 out of the income of the United States' Deposit and Literature Funds, not otherwise appropriated, "for the instruction of common school teachers in academies designated by the Board of Regents, in the science of common school teaching." The Regents have designated 113 academies to instruct classes of not more than twenty pupils in each academy, for which an allowance of \$10 is made for each scholar.

TEACHERS' INSTITUTES. By an act of the legislature, passed November 13, 1847, upon the same day that the office of county superintendent was abolished, provision was made to encourage the establishment of teachers' institutes in the several counties in this State.

Prior to that period institutes had been supported, in many of the counties, by voluntary efforts of teachers, encouraged and stimulated by the persuasion and controlling influence of the county superintendents. These officers found, upon an examination of the schools, that their first and greatest need was a supply of competent instructors, and they made this fact known to the people, and the utter folly of employing those who were not fitted by education, or habit, or disposition, for the task. Under these circumstances, it was imperative for those wishing employment, to qualify themselves to meet the demands of the profession. The cheapest and most practical mode of doing so, was to associate themselves in institutes and receive practical instruction in the branches they were to teach. It was not uncommon to see one hundred, and, in some of the larger counties, two hundred teachers and others preparing for the profession, in attendance on these institutes; and, although their sessions were short, *necessity* urged each one to make the greatest possible efforts; and no sooner did their instructors present the shadow of a new principle in science, or in the art of teaching and governing a school, than the substance was sought with an alacrity and energy of purpose indicating that the mind was fully aroused, and every object of study illuminated by the light of its inspiration.

The skill and experience of the best educators in the country were thus diffused among the many who went forth from the institutes to their respective schools, cherishing a higher and nobler ideal of their chosen vocation, and with the consciousness that only constant self-improvement, increased watchfulness, and untiring devotion to it, would answer its high demands. A fourth, at least, of all the teachers in the schools met together in their respective counties annually, reviewed their studies, exhibited and compared their several modes of governing and teaching the children and youth. These results were reported to successive legislatures, by the superintendents, as evincing a heart-felt and growing interest in the cause of popular education. That was a hopeful and promising period in the history of public instruction in this State. The operation of our school system drew from the Hon. Horace Mann, then Secretary of the Board of Education of Massachusetts, the following tribute of praise: "The great State of New York, by means of her county superintendents, State Normal School and otherwise, is carrying forward the work of public education more rapidly than any other State in the Union, or any other country in the world." But when the law abolishing county supervision was passed, these temporary Normal Schools were neglected, and the retrograde results of that neglect have been painfully felt by those who look upon our common schools as the pride and hope of republican institutions.

Institutes have been supported in some of the larger cities on Saturday forenoons for a number of years, and are considered by those whose duty it is to supervise and teach them, as an essential means for teachers' improvement.

In August, 1854, the State Teachers' Association, conscious of the importance of renewed and vigorous efforts to give more vitality and a higher toned influence to the schools, appointed one of their number, a gentleman of experience and ability as a practical teacher, to co-operate with this department in its purpose to resuscitate the institutes in the several counties, and to encourage teachers' associations and school celebrations.

I have pleasure in reporting, that during 1854-5, there were organized and successfully conducted thirty-six institutes in the counties. That over two thousand teachers, and those preparing to teach, were instructed in them in the theory and practice of teaching. The expense to the State has been less than one dollar to each person thus instructed.

In the opinion of the undersigned, the practical instruction imparted in these institutes, is the cheapest, and, for the time devoted, the most efficient, of any encouraged by the State, and it is recommended that the appropriation be increased to \$150 to each county in which an institute shall be established, and sustained according to the requirements of the act of 1847. It is believed that this is due to

the rural districts and to the villages whose schools are organized under the provisions of the general school law.

CERTIFICATE OF ATTENDANCE AT INSTITUTES. While the State should offer liberal inducements for persons to enter the profession, she has a right to demand as security for the faithful performance of the duties it involves, a continued effort for self-improvement, constant advance in knowledge and skill, and more elevated endowments that shall keep pace with the progress of the age. The propriety of this is recognized in the fact that teachers, generally, are supposed to bear annual examination. The tendency of daily association with those of inferior acquirements, is to remove the necessity which urges to effort; and as there is no point where the mind is at rest, it must retrograde under the continued influence of such association. Hence the teacher, whose attainments will answer the present demands of his pupils, is always *liable* to relax his pursuit of knowledge unless there exists some stimulating power to prompt him to application.

This power is pre-eminent in well-ordered institutes, for the teachers of superior qualifications are at once a stimulus and an example to those of less acquirements and skill, while among themselves the necessity of efforts for a higher standard of excellence seems imperative. Inducements, therefore, which would encourage and compass a general attendance of all the teachers of a county or even a large majority of them, are needed.

Authority of law might be given to the chairman of the committee appointed to manage and organize the institute, to associate with himself two others, who should, together, constitute a board, with authority to examine teachers at the institute and to grant them certificates of their comparative qualification.

There should be at least three grades of certificates, either of which might be considered as sufficient to authorize the employment of the holder in any common school in the county for one year from its date. Trustees would then have data to guide them in the employment of teachers, and an additional stimulant would be offered to teachers to neglect no opportunity for improvement, whether in institutes or elsewhere, by which they might hope to acquire a certificate of higher grade and a position more honorable and probably more lucrative. Under these circumstances, those who might receive a certificate of the highest grade, would be continually urged to action and devotion to their duties by the necessity of sustaining themselves at their re-examination at the close of the year, or the meeting of the institute. I have thought that school officers generally should have authority to grant certificates, indicating the grade of acquirement and qualification to which, in their opinion, the teacher is entitled.

EVIL OF CONSTANT CHANGE OF TEACHERS. There are two teachers employed in the same school, and at different periods of the same year in many of the districts. One no sooner becomes acquainted with the powers, dispositions, habits and acquirements of his pupils, than his term closes, and the trustees are prepared to employ somebody else, who must gain the same knowledge before he can effectually instruct them. As soon as he has secured, for those under his charge, proper classification, according to age and acquirements, and they are fully prepared and anxious to progress in their studies, his term of employment closes, and another is engaged to go through with the same preparation. The number of years consumed in this continued routine of repetition, which should add vastly to the power and acquirements of the youth under instruction, are too precious to be passed without notice.

DIMINUTION OF THE SUPPLY OF GOOD TEACHERS. There has been a diminution of the supply of teachers in this State, in consequence of inducements offered in other localities. Many are now teaching in Pennsylvania. Her system of county supervision is awakening among the masses of her people a lively interest in her common schools, and should she hold fast in that which is good, and not follow the example of New York in abolishing the office of county superintendents, her almost limitless wealth will not add so much to her future power and renown, as her common schools. The West, too, which offers so many inducements to the energetic young men and women to migrate thither, is drawing sensibly upon the supply of teachers; and so long, too, as other vocations promise greater wealth, and superior position and influence in society, so long will the proper education of the children in this State require of those to whose hands is intrusted the duty of legislation, the establishment and liberal support of temporary and permanent institutions for the education of teachers.

AID TO THE NEW YORK TEACHER. By virtue of an act of appropriation made by the legislature at its last session, the undersigned subscribed for copies of the *New York Teacher*, to be sent to each town and city superintendent in the State. All communications which this department desires from time to time to

address to them generally, or through them to district officers, are gratuitously inserted. In no other way could this be done so readily and economically.

It is under the control of a board of editors, composed of highly qualified and experienced teachers, appointed by the State Association, and is peculiarly valuable to town superintendents; for it supplies them with important information concerning the construction of school-houses, the duties and proper qualification of teachers, and the most approved modes of instructing—thus adding to their capacity for supervision.

COLLEGES AND ACADEMIES SHOULD BE CONNECTED DIRECTLY WITH COMMON SCHOOLS. In his last annual report, the Superintendent presented his views in regard to the connection which ought to exist between the primary schools and the higher seminaries, as alike instruments in one comprehensive system of public instruction.

The academies being directly and regularly aided by a permanent grant of public money from the Literature Fund, the duty of the undersigned seemed to require that he should invoke the attention of the legislature to the framing of some plan by which the services to be rendered by them in return, should be fixed and determinate, and should, moreover, directly subserve the general benefit, instead of being limited to the children of those who have the pecuniary ability to support them at the academies. With this view, he again commended to the consideration of the legislature, the proposition of a former Superintendent of common schools, that the academies should be required to furnish free tuition to a number of pupils, proportionate to the public money received by each. It was also proposed that the free scholarships in the academies should be made prizes for distinguished ability and acquirements in the pupils of the common schools.

This plan contemplated the putting of the colleges, so far as they may receive public money, upon the same footing; that is to say, subjecting them to the obligation of expending it in the maintenance of free scholarships to be granted to the successful competitors in the free departments of the academies.

Other methods were suggested as alternatives, which would secure the same object—that of rendering the colleges and academies, to the extent that they may be recipients of public money, *common colleges and common academies*, in the same sense as schools are common. Among these were the obligatory investment of the money granted, in the support of professorships of didactics, for instruction in the theory and practice of teaching; in additions to the libraries of the institutions receiving grants, upon the condition that the libraries shall be open, under proper regulations, for the use of every citizen; in the maintenance of courses of public lectures upon such of the physical sciences as tend most immediately to the increase of production, such as agricultural chemistry in the rural districts, or general chemistry and physics in the large towns and cities.

The superintendent retains the convictions which prompted the suggestions of his former report. He regards it as highly desirable to the prosperity of the higher institutions that they should be plainly seen to co-operate directly in elevating the character of the primary schools, and in enlarging the range of that instruction which they offer to all the children of the State. It can hardly be hoped that this will be so generally seen, as to secure the same hearty, popular support for pecuniary aid to the higher seminaries as now buttresses the common schools, until it shall be apparent that the State, by its contributions, fosters and diffuses practical science, and not mere erudition. The common schools are the nurseries of the more advanced institutions, and the latter must thrive in proportion to the industry of their friends in cultivating and multiplying thrifty shoots in the former, in transplanting them by easy gradations to the seats of maturer learning, and making the latter in a wider sense than now, public institutions, instead of the dependents of limited classes.

INSTITUTION FOR THE BLIND AT NEW YORK. The number of pupils in the Institution for the Blind is one hundred and sixty, of whom one hundred and twenty-four are beneficiaries of the State. The amount expended during the past year for their support and tuition was \$19,531.59.

The pupils of this institution are instructed in the branches usually taught in common schools, and in some of the higher branches of science. They are likewise taught to manufacture baskets, mats, mattresses, brushes, carpeting and band-boxes. The females are instructed in plain sewing, various kinds of fancy knitting and bead-work. The study and practice of music constitutes an important feature in the course.

Many of the graduates have found situations as organists, choristers and professors of music in different sections of the State, some are employed as teachers in similar institutions in other States, and a number are retained in the institution and have proved most successful teachers. It is a part of the policy of its managers to educate their own teachers.

INSTITUTION FOR THE DEAF AND DUMB. The number now in the institution is two hundred and ninety. The amount paid from the treasury for the tuition and board of the beneficiaries during the last fiscal year, was \$30,672.06.

The several branches of science and of the industrial arts continue to be taught with success. Cabinet-making, shoe-making, book binding, and, in its season, gardening, are all prosecuted. All the pupils are instructed in drawing, thus affording them an opportunity to develop whatever talent in the art they may possess; and instruction in the art of engraving on wood is given to a select few, who manifest a capacity and taste for it. The young women are taught plain sewing, dress-making, tailoring, the folding and stitching of books, and the lighter household duties.

The experiment of organizing a class in the higher branches of science, which was instituted three years since, has proved entirely successful. The course of instruction for this class embraces three years, and the first class was graduated at the close of the academic year last past. Their attainments, as shown by their examination, and set forth in the report of the examining committee, were superior to those ever known to be made by a class of deaf-mutes. The restoration of the deaf and dumb to usefulness, and in a great degree to the society and sympathies of their fellow beings will be hailed as a bright feature in the march of Christian civilization.

INSTRUCTION AND CARE OF THE INDIANS. Among the Senecas, fourteen schools have been in more or less successful operation during a part of the year. Of these, five are on the Allegany reservation, four of which are conducted on the district school plan, one is a girl's boarding school, and all are sustained by the American Board of Commissioners for Foreign Missions. Seven are on the Cattaraugus reservation, and all are conducted on the district school system, one of which is supported by the State, and six by the American Board. Of these, three have been in operation only about half of the year. There are also two schools on the Tonawanda reservation, one of which has been taught by a young Indian lady, educated at the Normal school, who has proved herself to be a competent and successful teacher. Three Indian youth have been employed as teachers on the Cattaraugus reservation, two of whom were beneficiaries of the State at the Normal school, and the other was educated at the Clover Street Seminary. All are reported to have succeeded well in teaching.

On the Tuscarora reservation, there are two schools; one a girls' boarding school, supported by the American Board, the other a common school supported by the Indians.

On the Onondaga reservation, there is one school supported by the State. Those having the supervision of it report the whole attendance to have been forty-five, of whom thirty-four are under twelve years of age. The average attendance is estimated at about twenty, which is greater than that of former years, and is said to have been secured by the bestowment of food and clothing as a reward for punctual attendance.

On the Oneida reservation, there are two schools, both supported by the State.

Under the appropriation of 1854, five Seneca youth—four girls and one boy—were selected and placed in farmers' families. One of the girls after five or six months returned home, and another was appointed in her place, who also left soon after. Of the other three, one has returned in consequence of the death of her father; the remaining two are doing well in the places provided for them. The boy is still in his place. All have had the reputation of good scholarship and good behavior.

An act was passed by the legislature on the 10th of April, 1855, incorporating the Thomas Asylum for orphan and destitute Indian children, to be located on the Cattaraugus reservation, and appropriating two thousand dollars for the erection of buildings.

Since the Seneca nation began to adopt the habits of civilized life, its population has increased at least twenty per cent., and a similar increase is noticeable among other tribes in proportion to their advancement, while those of the aborigines who retain their savage customs, receiving from the whites only their vices, have been gradually wasting away, and many have become extinct.

CITY SCHOOLS. It is their mission to give a practical education alike to the rich and the poor; and they are fulfilling it in a manner creditable to their particular localities and to the State. Thousands of parents have been induced to remove from the rural districts for the purpose of educating their children in these schools. With one or two exceptions, they are under a complete and thorough supervision, which points out the most approved modes of school architecture, secures competent teachers, and incorporates into their plans of instruction every improvement of the day.

SUPERVISION OF SCHOOLS. At present the school officers consist of trustees, town superintendents, and a Department of Public Instruction. If the experience of the Department for fifteen years, and the testimony of every officer who has presided over it, supported by the opinion of every friend of popular education who has spoken upon the subject are worth anything, the work of the school system is performed in an unsatisfactory manner. The system lacks strength and compactness; its joints are so loose as scarcely to hold its parts together; its movements are irregular, and its results uncertain.

SUPERVISION OF CANAL SYSTEM AND SCHOOL SYSTEM COMPARED. To manage the canals there are three Canal Commissioners, with salaries of \$1,700 a year; a Canal Auditor, at \$2,500 a year, with clerks, at \$5,300; a Canal Board composed of nine State officers, whose duties connected with the board occupy much of their time; five Commissioners of the Canal Fund, to keep and manage its moneys; a corps of engineers, with salaries varying from \$2,500 down to \$500; a troop of collectors, superintendents, inspectors, weighers and lock tenders; the whole forming a very complicated and expensive system, confined, in its operation, to but a fractional portion of the State. Compare the School Department with its Superintendent, deputy and two clerks, with this formidable array of receiving and disbursing officers. I do not include the town superintendents, because the time and attention devoted by them is as insignificant, compared with the wants of the schools, as their reward is stinted.

The schools are as much more important than the canals, as mind is more important than matter. The schools are the nurseries of mind. The State would exist and grow in material and intellectual strength if the canals were filled up. But abolish the schools, and it would sink into barbarism. The schools inform, invigorate, and elevate the masses; the canals are the muddy avenues of trade. The general intelligence of which we boast, the mental superiority of our people, their inventive powers, and mechanical skill, are the fruits of the schools. Our common schools lie at the foundation of our superiority and greatness as a State. Why, then, should more care and circumspection be bestowed upon a monetary interest, which, if abandoned to-day, private enterprise and capital would carry on with far more vigor and economy to-morrow, than upon a system which is more important in a pecuniary point of view, and which, in a moral, intellectual, and even political view, has a value beyond arithmetical calculation.

COUNTY SUPERVISION. County supervision was recommended by Hon. John C. Spencer, in 1841, and instituted under his administration. In 1843, the Hon. Samuel Young, who came into office strongly prejudiced against the plan, after a year's experience of its results reported to the legislature that "in every county of the State where the Deputy Superintendent has assiduously fulfilled his mission, an improvement in the condition of schools is manifest." In his next report he emphatically expresses his conviction of the importance and utility of county supervision. His successor, the Hon. N. S. Benton, in 1846, bore his testimony of the excellence and usefulness of the plan. The legislature of 1847, in an unpropitious hour, upon the memorial of some half dozen boards of supervisors, abolished the office. The Hon. Christopher Morgan, after one year's experience in the office of Superintendent of common schools, without the aid of county supervision, in his report of January, 1849, says "The act abolishing the office of county Superintendent was, in the opinion of the undersigned, a retrograde movement. If those officers were not in every instance competent and faithful to their trust the fault was in the appointing power. If a wise selection was not always made, does that furnish a sound reason for destroying the office? It may safely be said that no other office in the State would bear so severe a test." The same officer in his succeeding annual reports strongly urged upon the legislature the necessity of a restoration of the office. The Hon. Henry S. Randall, in his report in 1864, strongly condemned the present inefficient and defective system, and drew a glowing picture of the advantages, and the results of county supervision. The undersigned deems it unnecessary to quote at length the language of the reports, to which he has referred. He will be happy to aid the legislative committee who have in charge the subject of education, with all the facts within his knowledge bearing relation to this subject. It will be found that all opinion and authority worthy of the highest consideration are in favor of county supervision.

The duties of these officers should be to examine and license teachers; to visit and inspect schools; to organize and conduct teachers' institutes; to encourage teachers' associations and school celebrations; to counsel in all local questions arising under the operation of the school laws; to introduce to the notice of teachers and the people, the best modes of instruction, the physiological laws that govern the health and the growth of the young, the most approved plans of healthful exercise of the children; to awaken a general interest among the people on the subject of education; to report from time to time the condition and prospects of

the schools, and to perform such other duties as may be required by law, or regulations of this Department.

A county superintendent, or one in each assembly district, daily visiting schools, associating with teachers and pupils, holding public meetings in vill and neighborhoods, imparting and receiving knowledge, inspiring and acqu zeal, encouraging the formation of Normal classes, and supervising and establ ing teachers' institutes, discussing plans for developing and guiding the you mind, awakening parental solicitude, encouraging the teachers and inspiri pupils with a desire for higher attainments, and infusing vitality and enthul into every department of instruction, is the one thing most needful to perfect school system. Such a supervision would awaken the people to the import of the system, and give that intensity to the popular interest in the welfare culture of the young, so essential to its cordial support and successful operatio

This appeal was successful. Provision was made by the legislature of 1854 the appointment of a Commissioner of Common Schools for each county, a convention of these officers has already been held for conference and united pl There can be no doubt that in one years' time the torpid members of the sci system will begin to show signs of life, and the predictions of the Superintendent will be fully realized.

AMENDMENTS IN THE SCHOOL LAWS. The Superintendent concludes his port by recommending ten amendments as worthy of immediate attention.

The system of public instruction established by the legislature and aided or State appropriations in New York, is far more comprehensive than exists in other State. It does not fall within the plan of this article to present full de of the collegiate, academic, special and supplementary institutions, which m be gathered from the Annual Reports of the Regents, of the Deaf and Dumb, Bl Idiotic, and other special institutions. We glean the following items from Report of the Comptroller for 1856.

STATE EXPENDITURES FOR EDUCATIONAL AND HUMANE PURPOSES IN 18	
Department of Public Instruction at Albany, salaries, &c.,	\$8
Regents of the University,	2
Appropriation for Common Schools,	800
" " Colleges, Academies, &c.,	74
" " Teachers' Departments in Academies,	20
" " Normal School at Albany,	12
" " Teachers' Institutes,	2
" " Indian Schools,	3
" " New York Teacher, for Town Superintendents,	
" " Institution for Deaf and Dumb, support, building,	57
" " " Blind,	18
" " " Idiotic,	53
" " " Lunatic,	45
" " House of Refuge, Western New York,	30
" " " Juvenile Delinquents,	31
" " Orphan Asylums,	38
" " Hospitals and Dispensaries,	66
" " State Geological and Agricultural Museum,	30
" " State Library,	15
" " Agricultural Societies,	9
" " State Prisons,	480
" " Geological Survey,	8

NORTH CAROLINA.

First, Second and Special Report of the General Superintendent (C. H. Wiley,) of Common Schools, submitted in 1884 and 1885. 194 pages.

These reports exhibit the history and condition of the system, and schools in North Carolina, with plans and suggestions for the improvement of both. The Superintendent dwells on the following points.

CONDITIONS OF SUCCESS. 1. A stricter and more uniform and patient attention to the execution of the Law.

2. Improvement in the qualification of teachers.

3. The better discipline of the schools.

WANT OF INFORMATION ABOUT THE COMMON SCHOOLS. The biennial reports of the Literary Board have been mostly confined to this one object; and hence, for twelve years, we have labored in darkness. A deep obscurity has veiled all the operations of the system—not one single general report, with details, has emanated from it—not an official statistic appeared, excepting the general urgent declarations of our judicious Literary Boards, declaring the necessity of light, and their inability to furnish satisfactory information.

As the consequences of this obscurity and uncertainty have been most pernicious, we cannot now have too much light. This is the more especially needed here, because common schools are a new thing to our people; they were adopted and started among a population having no experience in such things, having no examples before their eyes in the neighboring States, many of them wedded to other systems, and many alas! never having had the benefits of any kind of education.

The government has not only failed to furnish information so desirable and all-important, but, without by any means desiring or designing it, has exercised an influence the other way; and except in the semi annual announcement of the division of the School Fund, and in the wise suggestions of the Governors and of the Literary Boards, and the occasional patriotic exertions of members of Assembly, the existence of the common schools has been seldom publicly recognized. We have two Almanacs published in the State, by enterprising and public spirited gentlemen; and yet, even in these useful repositories of local statistics carefully made up, and which go into every house, the most important interest of North Carolina has not been named! I by no means wish to be considered as censuring the publishers; I mention the fact as a most significant and ample illustration of our carelessness in furnishing that light so all-essential to the healthful progress of our system, and of our failure even to recognize in our recorded statistics the existence, much less the progress, of this great and fundamental institution. The members of the last Assembly were fully awake to the importance of this matter; and it is my ardent desire to justify their liberal confidence in using all possible ways to reach with information and statistics, every citizen of the State. To do this, I must of course speak with more than one tongue; and among other means I have reflected on the propriety of issuing a Common School Almanac for universal and free distribution. I desire the reading matter to consist of descriptions and short histories of other systems—statistics from other States—sketches, anecdotes and statistics of our own system—general information about education, suggestions, regulations, duties of officers, &c., &c.

It is not at all uncommon to have men on committees who can not read: some of these, as I know from personal observation, make capital committee men, all things considered, when there are checks and guards by which they can learn a teacher's character and capacity from disinterested persons of more intelligence.

TEACHERS. There has been great complaint in regard to them; and I know it to be a fact, that their incompetency and their want of fidelity in many, many cases, have given just cause of complaint. This is a real sore, and one of the severest which now afflicts our system; and the character of these teachers has done much to disgust a large class of citizens with our system, and to cause intelligent people to refuse to send to the schools, or to interest themselves in their success.

It is not the want of money which makes indifferent teachers and indifferent schools; we have a good illustration of this, in the fact that the best schools are by no means to be found in those counties where the largest salaries are paid. Of course good teachers ought to be well paid; but bad ones have been paid as much as the good ones, while much better ones could be employed for the same salary. I do not say the sums paid are sufficient for worthy instructors; but I do assert

that much better ones might be employed at the same rates, and that the mere increase of the salary will not elevate the standard of teachers without the assistance of other causes. On the contrary, large salaries under the old regulations would often enhance the nuisance; it would be an inducement to imposters and adventurers to swarm among us in pursuit of the sums thrown out to attract the attention and excite the enterprise of such characters. Have it understood that fifty to seventy-five dollars per month were to be paid to those who would *fill in* so many days in a school-house; and that no evidence of moral character, and no certificate as to mental qualifications from those capable of judging, and no reports of the manner in which they had discharged their duties, were to be required, and you will have not merely, indifferent teachers, and respectable and moral persons now so much complained of, but every ignorant neighborhood, from the seaboard to the mountains, infested and overrun by plausible, worthless, and dangerous characters; setting on foot all sorts of intrigues, imposing on the credulity of the simple-minded, and even conspiring with local speculators to obtain and divide with them the tempting spoils. Small as salaries now are, there have been reports of improper influences to obtain them—reports about committees selected by a few, with a view of employing relatives to teach the school, and even of higher officers using influences to have employed persons indebted to them, &c., &c.

The difficulty about teachers, as to numbers and qualifications, is the natural result of our former and present condition, with respect to general education: and it is a difficulty which the cause of education itself will have to overcome.

YEARLY EXAMINATION OF TEACHERS. Teachers must be yearly examined; to make this more effective as a stimulus, I prepared a form of certificate, which was to indicate the grade or rank of the teacher on the branches of spelling, reading, writing, arithmetic, geography, and grammar. Figure 1 attached to each study denoted the highest grade of scholarship; figure 5 the lowest allowable rank.

This form, approved by the Literary Board, was sent to all the counties. The effects anticipated were these: it was intended to honor good teachers by indicating their rank above others not so good, but still allowed to teach; it was intended to put committees on their guard, showing them the relative proficiency of the different persons licensed; and it was expected to excite emulation, and also to furnish officers and the public with the means of judging of the progress of the teacher from one examination to another. Few would like to take out the same numbers, if low, each year; and it would give the Committee of Examination a good reason for cutting off those who took out the lowest numbers on all studies and failed to improve. This was the second step; and with the certificates went instructions from me to the Examining Committees, explaining the law and the certificate; suggesting to them to have reference, in the granting of licenses with low grades, to the wants of the community; to be lenient at first with poorly qualified persons of good character, but to continue to elevate the standard by degrees, and to see that the law was enforced.

Some teachers held back—some affected to treat the idea of their being examined with contempt—but the chairmen, feeling sustained by the Superintendent, and knowing that through a general organ of this kind the prejudice of one neighborhood could be brought to the judgment of the whole State, and thus exploded, did their duty generally with commendable discretion and firmness. Appeals made to me from their decisions, even by college students, were not sustained; and under my advice payment was withheld in several cases from teachers who had failed to be examined. Finding the officers disposed to sustain each other, they were glad at last to pass the ordeal; and intelligent persons become more and more encouraged to act on Committees of examination, and to take an interest in the cause.

PUBLIC RECORD OF THE STANDING OF TEACHERS. This year, I have endeavored still further to build on this foundation happily laid; a foundation, the character of which, I have taken much pains fully to ascertain.

After careful consideration, a new form for the annual returns of chairmen was devised; and this form, without adding but very little additional trouble to the chairmen, contains columns and captions for a record of the names and rank of each teacher licensed.

This would be a still greater inducement to teachers to improve; and it would also enable us to see and understand our whole position, with respect to the supply and character of teachers—information very necessary to be known by all who wish to be able to understand and to aid our system. The form contained ample explanations, and males and females were to be distinguished, as it is important to have a good corps of female teachers, to operate wisely, for which we must first see how we stand with respect to them.

This form, also, by its caption would enable us to see how the fund is divided in each county, and how much is paid to each district, or divided for each child.

Still farther to improve these Normal Schools in efficiency, I have instructed or rather suggested to the chairman in the various counties, to put the names and rank of the teachers on the copies of their returns to be posted at the Court-House doors; and I do not think I can be accused of too much stringency while I am conscious that all these general regulations have to operate on relatives and intimate friends. Good teachers will delight in all such efforts by which they only shine the brighter; and all young people coming under these regulations, being forced to push on in the race of improvement, will some day rejoice that they had to pass through an ordeal that taught them self-reliance, and the necessity of persevering efforts at continual improvement.

TEACHERS' LIBRARY ASSOCIATIONS. As a farther means of improvement, I most earnestly recommend the formation of Teachers' Library Associations. Every trade and profession should be learning by experience; but how many teachers in North Carolina have read one single book giving an account of the experience and improvements in their profession in other places? How little interchange of thought is there on this great subject here!

There are a number of good works on the subject of school-teaching—and any one of these, even the most indifferent, might be read with great profit by our teachers generally.

They have Teachers' Institutes and Teachers' Societies of various kinds in other States; none of these would suit our peculiar position, for reasons which I could give, but deem it unnecessary to occupy time in discussing here.

The Library Association, on the principle indicated in my report to the Assembly, would be a Society peculiar to us, in many respects—and yet it is founded on the principle on which Teachers' Institutes are founded in other States.

The legislature should pass a general act of incorporation, giving corporate existence and privileges on certain conditions to the chairmen of the board of County Superintendents and the teachers of each county and committees of examination; and an appropriation of one dollar or more for each school-district—in that proportion, that is) should be made for a foundation. Let the Chairman be Librarian, with a certain remuneration—and let each teacher pay fifty cents, more or less, annually, for the privilege of membership.

The Superintendent can furnish or recommend a list of books, in conjunction with the Chairman; and each teacher who joins should have the fact stated on his certificate.

These associations will increase in consequence, they will form meeting places for teachers to assemble and discuss the affairs of education, and furnish proper places for lectures, by Superintendents and others; besides, when the minds of teachers are thus brought in contact, the superior intellects will diffuse themselves and be reflected in the action of all the teachers in the association.

SCHOOL BOOKS MUST HAVE REFERENCE TO THE STATE. I determined, if possible, to make arrangements to have the children classified, and to get into use one uniform system of good books; to insure this end of classifying the pupils, to save cost, to have good sources of instruction in the schools, and to have the young mind of the State in its plastic condition, learning about North Carolina, and learning to love the State, and to take an interest in its institutions. This of itself would make a great revolution in time; how could we feel an abiding interest in the common schools or in any other institution of the State, when under the old way of doing things, we were educated to love and respect every other country, and the affairs of every other country more than our own. I determined, therefore, to have a good series of North Carolina Readers; but so little respect have publishers had for our State, that I might not have been able to induce any one to risk it, except for the moral influence of the office I hold. It has influence with publishers; and I determined to make it tell for the good of our schools.

I made personal sacrifices myself of an amount of some importance to me; and I induced publishers to undertake a complete series, the whole to be prepared under my supervision. I selected Professor Hubbard, of the University, for Editor; and the publishers are a liberal and honorable firm in New York.

I would willingly have intrusted the selections, &c., altogether to Professor Hubbard; but his diffidence induced him to make me promise to examine everything.

Any one who undertakes a series of readers for youth, will find the task, all things considered, a perplexing one; the preparation of contents, selection of engravings, the rules, kind of execution, prices, &c., &c., are all grave subjects, &c., &c. To add still farther to the utility of this work as a Common School Text-Book, I procured a likeness of Bartlett Yancy, the immediate father of the Common Schools of North Carolina, to be engraved, and accompanied by a short familiar sketch of his life. No invidious distinction is intended; the object being to dignify common schools, to learn the children the idea that the great promoters of com-

mon schools are to be respected, and thus also, indirectly, to show other great men that if they are not promoters of the education of the poor children of the State, these children may not appreciate them as highly as others, perhaps of less note as politicians.

As I have often intimated, we must begin at the root of things to have an efficient system of public schools in North Carolina; there must be a revolution in the ideas and heart of the State, and the most fruitful seeds of such revolutions are school books.

SCHOOL LECTURES. In other States where common schools exist, they have Teachers' Institutes—associations of teachers for improvement, and the State being laid off into a certain number of these, the Superintendent, or some one designated by him, delivers occasionally lectures to them; and the teachers are required to attend, and they have their expenses paid. Now, so far as speeches are concerned, here is a vital centre through which they can operate to advantage. How is it in North Carolina?

When traveling, to acquaint myself with the character of the State, I often undertook to deliver lectures, and I was of opinion that many who heard me, began to feel a new interest in the cause.

But many of our so-called intelligent people would not attend, looking on the whole common school machinery as not intended for them—and they, whom they called the common people, had no excitement to draw them out, no example of interest set by others, while teachers, afraid no doubt of exposing themselves in some way, rarely ever attended. Hence, speech-making in North Carolina was not calculated much to advance the cause.

IMPORTANCE OF COMMON SCHOOLS. In common schools the people are infinitely more interested than in all the other literary institutions of the country. Colleges and academies reach, in their influences generally, only a favored few: even railroads and river-improvements reach only a portion of the people with their benefits. On this institution, and this alone, depends the temporal welfare of all the people: this is the great interest of all humanity, in every cottage and cabin, in all its phases, and all its positions throughout the entire scope of the State, and wherever in it is found the haunts and homes of men. It is the temporal hope of the masses for advancement in social rank, in political rights, in industrial prosperity: it is also the base of the pyramid of society, the foundation on which rest the prosperity of all classes, the stability of law, the security of the possessions of the rich, the liberties of the present, and all the hopes of the future. This is simple, unvarnished truth; and hence, from its own importance, from our want of experience, and from the difficulties by which it is surrounded, it makes the most solemn and urgent appeals to those to whose hands its destinies are committed. The efficient management of a concern so great, so lasting and pervading in its influences, implies care, investigation, liberality, commensurate with the interests at stake.

STATISTICS. The number of children now attending common schools, in seventy counties, is eighty-three thousand eight hundred and seventy-three, and the number in the counties not heard from, and the number not reported, may be safely estimated at twelve thousand more, making at least ninety-five thousand, who attended common schools in 1853, against fourteen thousand nine hundred and thirty-seven in 1840, being an increase of over six hundred per cent. in the number attending primary and common schools.

There were 632 primary and common or country schools in 1840; and I am thoroughly convinced, that if all our twenty-five hundred common schools are not as good as those 632 subscription schools were,—(and certainly they are not by a good deal,)—yet that there are more than one thousand common schools now in operation, which in all respects are equal to the 632 schools heretofore in existence. I am convinced that for every two good subscription schools broken down by the common schools, we have at least three equally good common schools and one academy somewhere else, or two good schools for one, besides three or four other schools not so good, for every one thus interfered with.

The average time during which all the schools are taught in the year, is about four months; and the whole number of white children between the ages of five and twenty-one years, can not be short of 195,000.

From the foregoing statistics, I am fully warranted in asserting that the average ignorance among the generation now coming on, will be at least fifty per cent. less, or only one-half as great as among those now on the stage of active life in North Carolina.

Great are our inducements to labor. Perhaps fully one-sixth of the free, grown-up people of North Carolina can not read the word of God!

OHIO.

Second Annual Report of the State Commissioner (H. H. Barney,) of Common Schools, to the General Assembly of Ohio, for 1855. 128 pages.

In 1853, the legislature of Ohio adopted a new school law, by which important alterations were made in the system of common schools, and the election of a State Commissioner by the people provided for. In 1852, H. H. Barney, at the time Principal of the Woodward High School, in Cincinnati, was elected to the office, and we have before us his Second Annual Report.

PLANS AND MEANS FOR THE MANAGEMENT AND IMPROVEMENT OF COMMON SCHOOLS. Prominent among the various means and plans for making our system of free schools more efficient, which have been fully tested, and received the sanction of enlightened educationists, may be enumerated the following, viz:

1. Each city, town, incorporated village, and civil township, should compose but a single school district, and the schools thereof be confided to the management and control of a properly constituted Board of Education.
2. Properly constructed school-houses, occupying eligible sites, and possessing ample play grounds.
3. Well educated, efficient and devoted teachers.
4. Great care and thoroughness in the examination of teachers.
5. Normal schools organized and conducted with reference to the sole and definite object of instructing in the art of teaching.
6. Properly managed Teachers' Institutes, Teachers' Meetings, and the formation of Teachers' Associations.
7. Competent visiting agents charged with the important duty of organizing and superintending Teachers' Institutes, delivering educational addresses, and suggesting to teachers, in their own schools, the best manner of instructing classes.
8. A system of vigilant and thorough supervision.
9. Teaching but few subjects at one time, and teaching them thoroughly.
10. A judicious course of study and oral exercises for each class, department, and grade of the school.
11. A uniform series of class or text-books, and a strict adherence to it for a reasonable length of time.
12. Judicious efforts on the part of teachers, parents and school officers, to induce all the youth of suitable age, resident within the district, to attend the schools.
13. Unremitting efforts to secure regularity of attendance.
14. The active and zealous co-operation of parents and school officers.
15. Maps, charts, diagrams, globes, and other illustrative apparatus, for common schools, and chemical and philosophical apparatus for high schools.
16. School district, or township libraries.
17. The introduction of the system of gradation to the greatest practicable extent.
18. The establishment of high schools and high school departments.
19. The education of youth at schools in their own neighborhood or township.
20. The education of both sexes at the same school, provided they can board at home, while attending it.

ABOLITION OF THE OLD DISTRICT SYSTEM. The school law of 1853 constitutes each and every organized township in the State but one school district for all purposes connected with the general interests of education in the township, and confides its management and control to a Board of Education. The law also contains provisions for introducing a system of graded schools into every city, town, incorporated village and township in the State. In accordance with the same principles and for the purpose of accomplishing the same beneficent object, the legislature of Indiana, in 1852, enacted a school law abolishing all the school districts, and declaring each civil township in the several counties a township for school purposes, and the trustees for such township, trustees for school purposes; and the clerk and treasurer, clerk and treasurer for school purposes; and that "the Board of Trustees shall take charge of the educational affairs of the township, employ teachers, establish and conveniently locate a sufficient number of schools for the education of the children therein," and that "they may also establish graded schools, or such modifications of them as may be practicable."

Whatever diversity of opinion may exist among educationists, as to the best manner of constituting township boards of education, there can be but one opinion as to the propriety of having a township school organization. Facts, experiments, the observations and opinions of those competent to judge, have fully settled this

matter. It is not, however, so clearly determined whether the school committees or boards of education of townships should consist of three or six persons; one-third to be elected, and the other third to go out of office, annually; or whether they should be elected by the township at large, or by the sub-districts. Nor is the principle fully settled, whether a township should be divided for certain specific purposes, into sub-districts or not. But it is fully settled that if a township is thus divided, the lines of the sub-districts should not in the least interfere with the proper classification, gradation and supervision of its schools.

It is thought by some that to provide the same amount of means and facilities for educating those who reside in the poorer and less populous portions of a township, as for those in the wealthier and more thickly settled portions, would deprive the latter of their rights; just as if the taxes for the support of schools were levied upon sub-districts, and not upon the State and townships.

If all the property of the State and of the townships is taxed alike for the purposes of educating the youth of the State, there is no principle plainer than that all should share equally, so far as practicable, in the benefits of the fund thus raised, whether they reside in sparse or populous neighborhoods.

SCHOOL ARCHITECTURE. In 1852 the legislature authorized the purchase and distribution of a copy of "*Barnard's School Architecture*,"* to every township board of education, and local directors. This distribution has been followed by the construction of many new houses and the thorough repair of old structures, on tried and approved plans of arrangement and furniture—over a half million of dollars (\$518,000) having been expended for these objects in 1854.

During the year, 740 school-houses have been erected, and several of them are models of taste and convenience. And it is most gratifying to state that nearly two-thirds of the school-houses in the State are reported "*good*," and more than one-half of the remainder are represented to be in a tolerable condition.

If any one doubts the intimate connection between good school-houses and good schools, let him consider how difficult it generally is to induce a good teacher to go into a district where the school-house is too small, badly constructed, improperly seated, unpleasantly located, without the requisite means of ventilation, destitute of playgrounds and out-buildings; and, more important still, how difficult it is to secure regularity of attendance, and render the school attractive. If he still doubts the indispensable agency of good school-houses in creating good schools, let him, as he travels through the State, stop and contemplate the forlorn, gloomy and repulsive aspect of some of those ancient "*squatters*" on the public highway; let him enter them and note their diminutive size, rough and filthy floors, low ceilings, dilapidated desks, slab seats, dingy walls, and their unhappy and cheerless inmates; and after he has observed the slovenliness, disorder, coarseness, vulgarity, and the marks of obscenity on the very walls of the building, let him listen to the recitations, and observe how perfectly they correspond with the condition of things already noticed. Then let him pass on till he comes to one of those tasteful, attractive, elegant school-houses, with which the State is beginning to be honored and blessed; and after viewing its fine proportions, pleasant site, and ample play-ground, let him enter it and examine its superior facilities for the successful prosecution of study, its excellent arrangements for promoting the convenience, health and comfort of the teacher and pupils, for forming in them habits of neatness, order, taste and purity, and for exciting them to make high attainments, and aim at honorable distinction. Let him extend his observations still further, and he will find not only the building located and constructed with special reference to the laws of health, mind and morals, replete with everything that can delight the eye and gratify the taste, and admirably adapted to cultivate courteous manners, to inspire refinement of feeling, and to promote habits of study and thought, but he will actually find neatness and order among the pupils, skillful teaching, prompt and accurate recitations, refined manners, and good morals.

EXAMINATION OF TEACHERS. From a few counties, complaints have been made to this department, that schools, in some cases, have been deprived of teachers, owing to the high order of qualifications which the examiners demanded of the candidates for certificates. But every experienced school examiner, or other school officer, knows full well, that the demand for good teachers has never long failed to bring the proper supply. It is a fact with which most are familiar, that, in every township, some of the schools have been almost uniformly excellent, while

* *School Architecture: or Contributions to the Improvement of School-houses in the United States.* By Henry Barnard. Sixth edition. Cincinnati: H. W. Derby & Co.

others have been as uniformly inferior. The reason is apparent. In the former, the demand has always been for good teachers and no others; but in the latter, the proclamation has been, "our school is backward, therefore a poor teacher will answer the purpose."

NORMAL SCHOOLS. Wherever public opinion has become fully enlightened on this subject, "it is admitted that teaching is an art to be learned by apprenticeship like any other art, and that special training for the business of teaching is as indispensable as for any pursuit or profession; and the time, it is believed, is not very distant when intelligent parents would think it no less absurd to place their children in charge of a teacher, who had not been trained in the principles and methods of instruction, than to employ a surgeon who has never made himself acquainted with the science of human anatomy."

Mr. Cyrus McNeely, of Hopedale, Harrison county, has donated buildings admirably adapted for school purposes, and thus occupied hitherto, to the endowment of Normal Schools. The gift includes spacious and beautiful grounds; has been appraised at \$11,600, but is subject to the condition that the State Teachers' Association shall raise the additional sum of \$10,000. An effort is now making to comply with this condition; and no worthier object for the aid of the State is likely to be presented for the consideration of the General Assembly.

The McNeely Normal School was organized by the election of eleven trustees, who have appointed Cyrus McNeely, President, Asa D. Lord, Secretary, and George K. Jenkins, Treasurer. The regular course will occupy two years, to enter upon which, with profit, the students should already be familiar with the branches usually taught in schools.

A similar enterprise has been undertaken at Lebanon, Warren county, under the designation of the "Southwestern State Normal School." Mr. Alfred Holbrook, with five assistants, are announced as teachers. The organization resulted from a general concert of action among those engaged in the instruction of youth, and is auxiliary to the Ohio State Teachers' Association—a very favorable location, and commodious buildings have been already secured—the first session has elapsed with seventy pupils in attendance, and all the indications of future usefulness are very satisfactory. The terms are so arranged that while some young persons can pursue a regular course of training, study and practice in an experimental school, others, already engaged as teachers, can, during the interims of their own schools, attend a session of eleven weeks, more or less, without interfering with those pursuing a regular course of study the latter being not unlike what is prescribed at the McNeely Institution.

TEACHERS' INSTITUTES. The usefulness and efficiency of properly organized and well managed Teachers' Institutes, no longer admit of a reasonable doubt. For sixteen years their utility has been thoroughly tested. This indispensable agency in the cause of popular education, originated in the State of Connecticut; and the first body of teachers was assembled for the purpose of being taught how to teach, in Hartford, in 1839, at the instance and on the recommendation of Henry Barnard, one of the distinguished pioneers of educational reform in this country. Very soon thereafter, it was introduced into all the New England States, and has now found its way into every State which enjoys the priceless privilege and blessing of a good system of public instruction. This instrumentality has proved eminently successful, not only in directing the attention of the people to the importance of education, and of diffusing among them correct and enlarged views on the subject, but in bringing the teachers together; awakening in them a proper appreciation of the responsibilities of the work in which they are engaged; giving them much valuable information in regard to the best means and plans of organizing, instructing, and disciplining their schools; exciting in their minds greater zeal for their important vocation; in short, imparting to them that which is the paramount and pressing want of our common school system—the *theory and art of teaching*. These institutes are capable, if rightly managed, of being rendered instruments of great power and efficiency; and they should, therefore, receive at the hands of teachers, school officers, and the people at large, that encouragement and support which their importance in the economy of the system, demands.

In the absence of any State provision, Teachers' Institutes have been held under the auspices of State Teachers' Associations, and other voluntary efforts, originally put forth in Ohio by Dr. Lord, Pres. L. Andrews and others. According to the Report of the Agent of the Association for 1863, thirty-eight Institutes were held with an aggregate attendance of 3738 teachers. Mr. Barney recommends that "a small portion of the amount annually collected for school purposes be applied to the encouragement of Teachers' Institutes, or Normal Classes."

COMPETENT VISITING AGENTS AND LECTURERS. To three important instrumentalities for the advancement of public education, namely, Visiting Agents, Teachers' Institutes and Normal Schools, is Massachusetts greatly indebted for the present proud elevation of the character of her public schools. And equally is Ohio indebted to the eminently efficient services rendered by Lorin Andrews, Esq., now President of Gambier College, and to Dr. A. D. Lord, while acting as the Agents of the "Ohio State Teachers' Association." Wherever they went, whether into the schools, before Teachers' Institutes, educational assemblies, new life and vigor were infused into our educational system. The cause of popular education rose in public estimation, teachers were rendered more competent to instruct and more powerful to influence, and those methods of imparting instruction and securing good discipline, which the most enlightened and experienced teachers had found by actual practice, to be most successful, were more widely disseminated. Valuable suggestions were made respecting the art of teaching and conducting schools, the structure of school-houses, the union of districts for the purpose of grading the schools, the classification of scholars, and the most successful means for elevating the profession of teachers.

It is a high and a well deserved compliment to the teachers of Ohio, that, at their own expense, they so long sustained in this important sphere of operation, two gentlemen of great practical experience and untiring zeal. The effect of such efforts in the noble cause of public education, will long be felt and appreciated throughout the entire State. The result of such labors is seen in the numerous union and graded schools which are rapidly springing up in almost every county in the State, in the improved methods of organizing and instructing schools, and in the deep interest which is manifested by the people in these educational improvements. With such efforts, such zeal, and such persevering endeavors to incorporate into our school system, whatever long experience and careful observation has demonstrated to be of practical utility, Ohio is destined to excel in learning and true wisdom, as well as in her physical greatness and prosperity.

SCHOOL SUPERVISION. An intelligent and efficient system of school supervision should be regarded as of vital importance to the welfare and success of our common schools. Let such a system be established and it will work a cure of nearly every unsoundness which now impairs and cripples the efficiency of so many of the schools in the State; for it is one of those vitalizing elements in a school system, which is capable of eradicating from it a thousand defects and evils. If school visitors, school officers, and parents would faithfully and intelligently discharge their duty in this regard; if they would prescribe suitable rules and regulations for the management and discipline of the schools under their supervision, fix upon a proper course of study, select a good series of text-books, report unfaithful and incompetent teachers, carefully observe the plans and methods of instruction adopted in the schools, impart proper advice and directions, inculcate in the scholars a spirit of obedience and subordination to authority, and an earnest love of study, encourage and stimulate parents to visit their schools and co-operate with the teachers—if school visitors and the friends of popular education would faithfully do these things, a new and important era in school reform and improvement would at once be ushered in.

In this State, a competent superintendent for each judicial district, would, for the present, answer the purpose full as well, if not better, than one for each county.

COURSE OF STUDY. Township boards of education are empowered "to determine the course of study to be pursued in the several schools under their control." This duty is much more important than is generally supposed; for, upon its prompt and judicious performance, the progress of the scholars, and the general prosperity of the schools most materially depend. A course of study and of oral exercises, adapted to the ages, capacities, and attainments of the pupils in each grade or class, would essentially aid in giving steadiness and efficiency to all the operations of the school; assist the teacher in systematizing his business, and economizing his labors; encourage a hope of promotion in the pupils, by enabling them to see at once what amount of work they must perform in order to be advanced to a higher class or grade.

It is earnestly hoped, then, that no board of education will allow another year to elapse without attending to a matter of such vital interest to the schools under their charge. By conferring with the most experienced and successful teachers in their respective counties, by taking the advice of their county examiners, and other enlightened friends of education, they will find no difficulty in fixing upon a proper course of study for the schools in their respective townships.

TEXT-BOOKS. No evil connected with the present condition of our schools calls more imperatively for immediate correction, than the great variety and frequent change of text-books.

Among these disadvantages are the following, viz:

1. It tends to multiply the labors of the teacher by compelling him to divide his pupils into as many classes as there are kinds of books on the same subject in the school; for at each change some of the former books will still remain.

2. It shortens the recitations of each class, and thus prevents that careful and deliberate hearing of recitations, which is indispensable to thorough scholarship and proper mental discipline.

3. It prevents the teacher from making that due preparation for each class and each recitation, which is necessary to excite in his own mind and in the minds of his scholars a lively interest in the study. Even an experienced teacher cannot use a new work with the same advantage that he could the one with which he had long been familiar.

4. It prevents the formation of large classes, and the stimulating effect which such classes always have upon both pupil and teacher.

5. It renders it necessary to keep the scholars much longer on each subject of study than would otherwise be necessary, and thus abates their interest in it, and induces many to abandon the study entirely.

6. It subjects parents to a needless expense, tends to bring our whole school system into disfavor, and uselessly consumes much valuable time.

7. Where boards of education neglect to adopt for the schools under their supervision, a uniform series of text-books, the matter is too often subject to the dictation of teachers; and the teachers, especially in the country schools, being frequently changed, and it being the interest of each new teacher to introduce such books as he has been accustomed to use, the schools soon become filled with a multiplicity of books on each subject of study, the number of classes becomes too great for thorough instruction, and the pupils, in many instances, continue stationary from year to year.

8. It adds to the cost of education, not only by increasing the expense for text-books, but also by protracting the period required to make the scholar master of a study. It holds out a continual and direct invitation to book-makers, publishers and agents, to be constantly pressing teachers and school officers for new changes, and thus tends to perpetuate and extend these various evils.

The prompt removal of these injurious consequences is, we repeat it, the imperative duty of boards of education. And to this end they should determine at the earliest practicable day, what text-book shall be used in each study, and how long it shall continue to be used in the schools of their respective townships.

NON-ATTENDANCE AT SCHOOL. It is obvious that something ought to be done to secure the education of those whose parents, either from defective education in themselves, or from the pressure of immediate want, or from ignorance of the great privileges which our public schools offer, or from the selfishness which is encouraged by finding profitable employment for their children, do not avail themselves of the means offered by the State to secure a proper education for their children.

To induce the people to act as becomes their duty and true interest in this matter, several distinguished friends of education, including several State Superintendents of public instruction, have recommended that the State school funds be apportioned among the counties, townships and school districts, not according to the enumeration of youth of school age, but according to the average yearly attendance of scholars in the several common schools; thus making it the interest, as it is the duty, of every inhabitant of the district to urge the constant and regular attendance at school of all the children residing therein. While we have among us so many children of foreign parents, recently arrived in our country, or speaking a different language from our own, or engaged in our manufactories and on our public works, and while we have among us so many parents who are too indifferent, or too reckless, or too poor to send their children to school, all who are charged by the State with the care and supervision of our common schools, and all who feel that as individuals they owe something to their country and the world, should see to it that these children are trained up for intelligence, virtue and future usefulness. They are destined to be our fellow-citizens, perhaps our judges and rulers, and therefore every dictate of enlightened patriotism and humanity demands that we should make all reasonable efforts to put them in a way to become intelligent and upright members of society.

IRREGULARITY OF ATTENDANCE. The annual school reports from county auditors disclose the fact that the average yearly attendance of the scholars in our common schools is less than two-thirds of the average number enrolled or belonging to the schools.

Hence it is easy to see that, in consequence of irregular attendance, not only one-third of all the school funds annually raised and distributed for the payment of teachers, is lost, actually thrown away, but one-third part of the time allowed for the cultivation of the minds of the youth of the State, is also lost. To the ac-

count then of irregularity of attendance, the annual loss of half a million of dollars may be justly charged.

But this most lamentable waste of money is but an atom in the scale, when weighed against neglected opportunities, misspent time, and the formation of evil habits.

Let it also be impressed, again and again, upon teachers, parents, school officers, and the friends of education generally, that the loss of only so many days of mental culture, as the pupil may be away from his school, constitutes but a tithe of his real loss. The absence of a day severs an important link from the chain with which all the parts of a subject of study are connected together, and thereby greatly enhances the difficulty of mastering the subsequent lesson. Besides, on his return to school after an absence of a day or two, his interest in his studies will be materially abated, making it more difficult for him to fix his attention upon them in consequence of his mind being preoccupied by the events and scenes which arrested his attention and interested his feelings while absent from school. Mental philosophers tell us that the memory depends upon attention, and attention upon the interest which we take in what is presented for our contemplation. Whatever, then, tends to abate this interest, impairs attention, and, of course, under such circumstances, what we learn the memory holds by a feeble tenure.

Moreover, at each return of the irregular pupil, he finds the general character of his recitations becoming more and more inferior to those of his classmates, and hence discouragement and listlessness steal gradually upon him, until ultimately he falls out of his class, and perhaps leaves the school in disgust.

Nor is this the extent of the evil; whenever any scholar unnecessarily absents himself from the school, or is unnecessarily detained by his parents, not only is so much of his time lost, so much of the school money lost, so much that is valuable in mental discipline lost, and so much of his desire for learning and his ability to acquire it impaired, but the whole school suffers.

Its arrangements are disturbed, the progress of its classes are delayed, the punctual scholar is obliged to wait for his laggard classmate, and the teacher's patience is severely tried.

Frequent absence from school for insufficient reasons, are very prejudicial to the pupil in another respect. They tend to form in him a habit which may cling to him through life, and seriously injure his character as a man of business, and subject him to mortifications and losses, which a habit of punctuality formed in early life, would have enabled him to avoid. There is no trifling fault which produces more inconvenience to society than a want of promptitude in attending to every duty at the proper time. Hence the great importance of forming at school a habit of rigid punctuality. Parents should duly consider this matter, and never detain their children from school upon slight grounds, and for trifling purposes; indifference to this subject on their part, encourages irregularity on the part of the child; that irregularity begets an inclination to play the truant; and truancy begets falsehood, and then the moral character of the child receives a shock from which it may never recover.

Absenteeism is, then, one of the worst evils under which our schools labor. From a good school it takes away its best influence, and a poor one it renders worse than worthless.

GLOBES, MAPS, AND OTHER ILLUSTRATED APPARATUS. During the last fifteen months, there have been forwarded to the Auditors of the several counties in the State, for distribution to the Common, Union and High Schools, 91 *orreries*, 339 *tellurians*, 6,805 five-inch *terrestrial globes*, 5,182 *hemisphere globes*, 943 *numerical frames*, and 1,140 *geometrical solids*. *Outline maps*, and *chemical and philosophical apparatus*, to the value of \$1,525.60, have also been forwarded. The cost of all the apparatus which has been thus distributed, was \$15,804.49. Most of this apparatus is denominated Holbrook's Common School Apparatus, manufactured by the Holbrook Manufacturing Company, of which F. C. Brownell, Hartford, Conn., is Agent.

SCHOOL DISTRICT LIBRARIES. During the years 1854 and 1855, the number of volumes distributed amounted to 258,926, and the cost of the same was \$150,787.08.

It has become a sort of axiom with many of our ablest and most experienced educationists, that a good library is quite as indispensable to a good school, as a good school-house and a good teacher. Indeed, it is now regarded, in many places, as a part of the business of the teacher, to encourage in his pupils a taste for reading, by calling their attention, at stated periods, to the interesting incidents and valuable information contained in particular works, and by assigning to them, as themes or topics for their essays or compositions, important facts and events described in the volumes of the library.

It is an essential part of education to render accessible to the young a choice

collection of books, and to encourage and stimulate in them such a genuine and passionate love of reading as will abide with them through life, and be held fast under every change of fortune. Hence it is that so many of our most successful teachers are reluctant to engage in schools where the pupils can not have access to good libraries; for they know that a love of reading begets a love of study, and is ever prompting to higher attainments, nobler aspirations, and more rational enjoyments. Hence it is that those who are solicitous to train up the rising generation for virtue, intelligence, prosperity and happiness, are the strenuous advocates for the establishment of public libraries. Hence it is that men of experience and observation have expressed the belief that the merest rudiments of education, if associated with a firm habit and a hearty love of reading, would prove a better safeguard for the young, as they embark in the rough conflicts of life, than a collegiate course, without the habit or love of reading. Hence it is, also, that the enlightened, modern, American idea, seeks to embrace in our educational system, not only a thorough and systematic course of school instruction, but also to introduce into every neighborhood entertaining and instructive books, and excite a taste for reading them.

District libraries, containing the biographies of men whose lives have been a blessing to the human race—the inventors of the press, the steam-engine and the telegraph, the spinning-jenny and the cotton-gin—eminent statesmen and profound jurists, distinguished moralists, chemists and philosophers—district libraries containing travels and discoveries in foreign lands, inventions for securing convenience and comfort to life—improved methods in farming and manufactures, and new modes of rendering the powers of the material world available to the use of man; such libraries can not but do most valuable service in calling out the talent of any community, and giving it power and direction. God has not withheld genius from any class of society, and has ever bestowed it abundantly upon the middling and poorer classes. The true wealth of a nation consists not mainly in broad and fertile lands and mines of ore, but in its mental and moral power. Intellect spreads the barren soil with waving grain; the want of it would render Eden a garden of weeds. The true means of advancing our prosperity are coincident with those of developing our intellectual and moral forces. That libraries, thickly sown as our towns and villages over the land, would be eminent agents for this object, admits of no reasonable doubt. Every rich man provides a library, that the minds of his sons and daughters may feed upon it, and grow strong. District libraries are this same mental food placed in the public market, so that all the hungry may go and eat. How small the expense which thus secures to all one of the highest blessings. What farmer or mechanic can say that his humble roof does not shelter as much of mind as God ever gave to Newton, or Webster, or Jefferson, or Fulton, or Demosthenes, or Morse, or Arkwright; or can say that the highest examples of human development, and human achievement, set before them in the volumes of a district library, would not incite his children to be and do likewise? And if these libraries should be the means of calling out one such name, how ample the reward every citizen would reap for his slender contribution to establish them.

These libraries will prove a source of incalculable benefit in another regard. They will invite the youth of our State to form a taste for reading at almost the only period of life when a taste for reading can be formed. It is a cheering truth that the treasures of youth are the stores of age. Old men inform us that when the eye has become dim, and the ear dull, and the memory feeble, and manhood almost a blank, the mind leaps the gulf of its palmy years, and dwells with unutterable peace upon the delights and impressions of early youth. The books they then read, and the scenes amid which they then studied, form no small share of their capital for happiness;—the great and good of other ages and climes with whom, in their early reading, they became acquainted, kindly come to visit them as they hasten to the grave, cheer them in the advancing gloom, and receive them to the light beyond.

Another benefit springing from these libraries, will be their influence upon the public morals. Never, since the first press was started, has there been disgorged upon the whole community such a multitudinous mass of corrupting literature as now. Upon every blooming virtue of the human heart, upon every manly aspiration, this deadly plague has descended, like the locusts upon the plains of Egypt. What hamlet has not this yellow, livid trash reached? Like the dram by the abandoned inebriate, this baleful literature is sought for by our youth with impatient eagerness, and devoured with hasty voracity. Good school libraries, properly selected, would greatly counteract this tendency; and, by supplying a wholesome aliment, substitute strength for imbecility and virtue for libertinism. They will impart additional interest to the scenes of youthful study—relieving the joyless elements of the exact sciences—unbending the mind over that which is pleasing as well as instructive—encouraging the pupil to regard the school room and its

pursuits as sure passport to distinction, and an important means of laying a proper foundation for future usefulness and honor, and thus rendering all the appliances for developing mind a harmonious whole. These libraries will most materially increase the efficiency, elevate the character, and enlarge the sphere of the whole common school system. They will greatly assist in drawing out and developing, on a liberal scale, the talent of the State. They will tend directly to increase intelligent reading in our schools by waking up mind, giving to the pupils higher and wider ranges of thought, making them better acquainted with the beauty, power and expressiveness of our noble language, and thus enabling them to read with more interest, ease and effect. These libraries, containing the history of the rise and fall of nations, the causes of their prosperity or adversity, their eminence or degradation, their happiness or misery, will greatly enlarge the sphere of useful knowledge, distributing among the people a liberal fund of valuable information, which will be to them an ever-springing source of enjoyment and usefulness.

GRADATION OF SCHOOLS. It is very gratifying to state that within the last two years, graded or union schools have been established in nearly one hundred and fifty towns and villages of this State, and that most of them are now in vigorous and successful operation.

The great advantages possessed by these schools over those established on the plan of the independent district system have been so fully tested by experience wherever the trial has been fully and fairly made, and were so fully set forth in a former report, that any further discussion of the subject at this time can hardly be deemed necessary.

1. More commodious school-houses, more eligible sites, and more ample playgrounds.

2. A reduction of the number of school-houses and teachers, and increased facilities for procuring teachers of a higher order of education and greater experience.

3. The introduction of a more judicious and systematic course of study, better text-books, and a less frequent change of them, and better methods of instruction and discipline.

4. Increased facilities for procuring and using to a much greater extent, chemical and philosophical apparatus, globes, outline maps, charts, and all other useful articles for visible illustrations.

5. Increased facilities for employing a competent superintendent to take the general management of the school, to enlighten the younger and less experienced teachers upon the various methods of imparting instruction, conducting school exercises, arranging classes, and managing cases of discipline.

6. Longer school sessions or terms, and greater uniformity in the general plan and operations of the school, and the consequent greater progress of the pupils from term to term, and from year to year.

7. Greater facilities for dividing the school into suitable departments, and for forming larger classes, but fewer in number, thus enabling the teacher to devote more time to each class, and impart to each scholar more systematic and efficient instruction.

8. Greater facilities for arranging the departments and classes according to the ages and attainments of the scholars, and for adapting, with skill and precision, the discipline of the school to the wants and capacities of those of any particular age.

9. The excitement and enthusiasm which a large class always creates in every member of it, not only during recitation, but also during the hours of study, by constantly reminding each scholar that many besides himself are engaged at the same time upon the same lesson, and that he must soon appear in their presence and measure himself, intellectually, with them.

10. The greater ease with which order and decorum are maintained, resulting not so much from the superior facilities for grading and classifying the scholars as from the smaller number of classes which each teacher is required to hear, and the consequent shorter intervals at which the periods of study and recitation will alternate, thus keeping all the scholars constantly occupied.

11. The greater ease with which the teacher and his scholars can be kept in sympathy with the subject of study and with each other, and the consequent greater interest which they will take in the recitation, and with which they will attend to every new illustration or exposition of the subject.

12. Increased facilities for forming in the pupils habits of diligence, and for securing a high degree of mental discipline, resulting from the steady and uniform progress with which they move on from class to class, and from grade to grade, thus training them habitually to regular duty and imparting to their minds the habit and the power of doing everything at its proper time, of acting systematically, and thinking consecutively.

13. The greater opportunity offered to each teacher for daily and systematic

preparation on the different lessons, resulting from the less number of subjects which he is required to teach, and thus enabling him to study the condition and wants of each class, and to enter upon the task of instruction not only with intelligence and skill, but with ardor and enthusiasm.

14. The facilities for employing a much larger number of female teachers, especially in the winter season, and thus securing to young children that peculiar influence and culture which females are so well qualified to impart.

15. The superior facilities for the successful prosecution of study, for hearing recitations and conducting all other school exercises, resulting from the fact that the ages, attainments and studies of the scholars occupying any particular room or department are nearly the same, and hence their exercises are never interrupted or their minds diverted from their studies, by the introduction of business in which they have no part or interest.

16. The incentives to greater diligence in the preparation of lessons, arising from the steady influence exerted upon the pupils by the sure prospect of promotion, beholding as they do, the moment they enter a graded school, an unbroken series of promotions before them, from the lowest class in the primary, to the most advanced class in the high school.

17. The new system furnishes increased facilities for economizing time and labor. Regarding what it accomplishes, a graded school possesses great advantages over a mixed school. No one who has witnessed a full and fair exhibition of the practical workings of both systems, will deny that in the former a teacher can instruct forty or fifty pupils more easily and more efficiently than twenty or thirty in the latter.

Let the new system, crowned with a High School, or a High School department, find its way into every neighborhood where the population is compact enough to admit of it, and let every township establish at least one High School as soon as the condition and number of the population will warrant it, and a generation will not pass before we shall have laid open to the world a vast increase of intellectual strength and energy. Then, indeed, will wisdom and knowledge be the stability of the times.

The secret of the great success which has so generally attended the establishment of graded schools, lies mainly in the fact that the course of study prescribed for each class and department is susceptible of being rendered so exact and the time actually required, with efficient instruction, to advance a class from a lower to a higher grade, so definite, that the teacher may justly be held accountable for failing to accomplish, within the time limited, the required work. Hence it is, that in such schools both teachers and scholars take such a warm and deep interest in their work, and labor with such indefatigable perseverance. The constant hope of promotion, and the certainty of it when deserved, urges with a strong stimulus, the pupils to unremitting diligence; and the teachers are aroused to greater zeal and fidelity in the discharge of their duties, knowing that their skill and faithfulness will be made manifest in the qualifications of the candidates whom they send to the higher departments of the school, and by the length of time occupied in imparting those qualifications. Hence it is that we see such marked increase in the efficiency, value, and comprehensiveness of the instruction imparted in these schools, as compared with what is exhibited in mixed schools.

PUBLIC HIGH SCHOOL. The facility afforded for engrafting upon the new system a High School, or High School Department, furnishes one of the strongest reasons for preferring it to the old system.

1. That the High School or High School Department, as a component part of a Common School system is worth more to the schools of lower grade than all its costs, independent of the advantages received by its actual pupils.

2. That admission to the High School is regarded as a most desirable promotion, operating as a powerful and abiding stimulus to exertion upon all the pupils in the lower schools, being regarded by them as the sure reward of persevering exertion.

3. That it arouses the dull, stimulates the indolent, and encourages the studious, by holding out to them the strongest of all honorable incentives to diligence in study, and uprightness in conduct; the assurance that if they effectually and faithfully improve the advantages offered in the lower departments, they shall have the privilege of receiving gratuitous instruction in the higher departments of learning.

4. That it reacts most happily upon the younger schools, by constantly presenting to them an example for imitation, and an object of hope and honorable ambition.

5. That it strengthens, energizes and adorns the whole common school system, inducing a greater degree of thoroughness, a better attendance, and more exemplary deportment in the school below.

6. That it opens to the poorest child an avenue by which he can be admitted to

the realm of knowledge, not as a *charity*, but as a right, imparting *free* education of a high order to hundreds of youth whose pecuniary means are wholly inadequate to secure it in private schools.

7. By bringing together, into the same school, children from families of the most diverse circumstances as to wealth, profession and occupation, it exerts a most happy social influence, enabling the child of poverty to feel the genial influence of our free institutions, and to learn that the road to usefulness, honor and happiness, is alike open to the meritorious from every class, and teaching the child of affluence to take his proper place upon the true platform of American society, and to depend for honorable distinction upon the proper cultivation and exercise of those faculties and powers which he possesses in common with his humble, but equally talented, school companion.

8. It enlarges the influence, extends the advantages, and raises in public estimation, the character of the whole common school system, giving thoroughness and expansion to the whole course of instruction, causing the people to take a warmer and deeper interest in its prosperity.

9. It helps to raise up among us a body of well educated teachers, and to excite among them a salutary emulation, by exhibiting in immediate comparison their aptitude, zeal and skill, as evidenced in the preparation of the candidates they furnish for the High School.

10. It takes the children of all, whatever their rank, occupation or circumstances may be, and sends them out into life endowed with such eminent advantages of education, and inspired with such principles to guide them in their future course that they will be a blessing to their day and generation, adorning their various pursuits with intelligence, enriching society with their discoveries, elevating and equalizing the rank and respectability of their widely different occupations, making industry honorable, and securing to labor its proper dignity.

11. An important and essential mission of the High School is to evoke genius, discover and call forth the latent talent of the young, to gather up from the humblest walks of life, even from the abodes of obscurity and want, many a gem of priceless value, to polish it, and then set it on high that it may shed its lustre upon the world.

EDUCATION OF CHILDREN AT SCHOOLS NEAR HOME. The new system affords to parents the important advantage of giving to their sons and daughters, without sending them from home, an education sufficient for any profession, business or station in life. It is a serious misfortune to be obliged to send children far from the parental roof, in order to give them a respectable English education; to place them beyond the reach of parental solicitude and admonition, and to expose them to the numerous maladies which may assail their health, and the alluring temptations which may impair and corrupt their virtue.

Deprived of the strong formative influence of parental care and control during the period when their characters are being most rapidly molded, it is no wonder that those who leave home in early youth to study in a distant school often contract habits which become a curse to them throughout the entire period of their subsequent lives. They are thrown among new companions. All are young; everything around them conspires to induce them to abandon all proper restraint, and give full license to every impetuous passion by which youth is swayed. What parent, that sends his son to a distant school, can be assured that he will not become an adept in every thing else but science. His child is away, and in his fond anticipations, he never dreams that dice, and cards, drinking, gaming, midnight debauchery, and every species of recreation and amusement, frivolous and dangerous, occupy his time, instead of sober, industrious study. The mild reproof of an affectionate mother, and the calm admonition of a kind father, can exercise no influence over his wayward course. If the pupil possesses strong moral principle to govern him, he may pass safely through the ordeal; if not, the stolen sweets of his student life must inevitably become the bitterness of gall in his future years. The strong and genial influences of home, with their myriad grasp upon the mind, are thrown away. His brothers, and sisters, and neighbors are not there to call the blush of shame upon his cheek at the very thought of a disgraceful deed. Deeds which, in his native town, he would never think of doing, and which, if done there, would bring down upon him the penalty of scorn and contempt, he can do with impunity when far away, and comparatively unknown.

The plan of creating high schools wherever the circumstances of the towns render it expedient, avoids all these evils and allows our youth to continue their education to the highest degree demanded by the masses, under the eye of parental supervision.

PENNSYLVANIA.

Annual Report of the Superintendent (Andrew G. Curtin, who is Secretary of State,) of *Common Schools*. Submitted Dec. 31, 1866. 361 pages.

This Document besides the report of the State Superintendent and the usual statistical summaries, contains the reports of 64 County Superintendents, full of information as to the condition and improvement of the common schools. These reports show the practical working of a gigantic system of common schools, including over 10,469 schools, 12,000 teachers, 528,000 scholars and an annual expenditure, including the city of Philadelphia, of over \$2,000,000. But even these reports do not show the activity which now pervades the entire state;—they should be read in connection with the proceedings of County and State Associations of Teachers, of County Institutes, of State Conventions of the County Superintendents, as published in the *Pennsylvania School Journal*, edited by Hon. Thomas H. Burrowes—whose hand framed what there was excellent in the old system, and who is we suspect the main spring of the great school movement which is going forward with such large results, and greater promises, in Pennsylvania.

The State Superintendent remarks:

PAST DEFECTS OF THE SYSTEM. It is undeniable that the common school system of Pennsylvania had lost the prestige and hopes of its earlier years, and had disappointed the expectations of its friends. Its failing energies and want of adaptation to the great objects of its creation, seemed to portend its ultimate decay, unless animated by a thorough reform and an infusion of fresh vitality. The causes were obvious: radical defects in the organization of the system; and want of knowledge and energy in the administration of its local details—the latter resulting, in most instances, as a necessary consequence from the former.

In numerous instances, and in many of the school districts, the tax duplicate was withdrawn from the hands of the collector as soon as the warrant for the share of the district in the State appropriation was received and cashed, and no tax collected, no teachers employed, no schools opened, and the money appropriated by the State to sustain a languishing system of public instruction by common schools, applied to the repair of the township roads and highways, and other similar illegal purposes; or what is infinitely worse, transferred to the pockets of the directors themselves, as compensation for their official services. Warrants were sometimes obtained on vouchers manufactured for the purpose, and the money drawn from the treasury and applied to the benefit of parties having no official connection with the schools.

The payment of large fees to justices of the peace for legal advice, and the monopolizing of the school fund by the directors in liberal contracts with themselves to build and repair school-houses, (who were not always faithful to their covenants,) present still another phase of these financial embarrassments, which, while it is humiliating to the intelligence and integrity of our people to expose, may justify a passing notice in vindication of remedies adopted and the promotion of others proposed.

The selection of teachers from mere favoritism, or as relations of members of the board of directors, or, in an economical spasm, of low priced men; the total neglect of proper attention to the temperature, light, ventilation, furniture, apparatus, text books and surroundings of the school-room, produced in many districts of the State, schools that were but a melancholy burlesque on the cause of popular education; many of them were fitter subjects for the consideration of grand-juries than for the uses of their dedication, and highly injurious to the health of the victims stately imprisoned within their walls. It is not surprising that as these abuses were beyond the reach of individual effort, and grew, as a consequence, out of the defects of the system itself, all who could afford it, carefully withheld their children from the common schools, under an honest impression that their minds, and their health, and their morals, could not be improved in such rural prisons. In short, a system of public instruction that should be in its integrity, the pride and glory of the Commonwealth, was rapidly becoming a burthen to her citizens, and a by-word and reproach within and without her borders.

LAW OF 1864. Such abuses and want of force called for legislative action, and led to the passage of the school law of the 6th of May, 1864. In providing compensation for secretaries of boards of school directors, and thus insuring the

services of more capable men, and faithful and true accounts of the transaction of the business of the boards—in requiring better security, and more rigid accountability from treasurers and collectors, and other incidental and valuable modifications, the law has been found to be highly salutary and beneficial.

But the great leading feature which distinguished this enactment, and the Legislature from which it emanated, is the creation of the office of County Superintendent, which supplies the necessary agency in the administration of the school law in the districts, and provides the Department with the knowledge and control of its operations. Although it is an office of limited powers, it has infused renewed life into the system, and has done more substantial benefit, in the short space of time it has been in existence, than any reform heretofore made.

COUNTY SUPERINTENDENCY. It has effected a useful adjustment of the business operations of the boards of directors, in correcting the deranged state of their finances, and in many instances in recovering money of the schools over looked or supposed to be lost. It has elevated the profession, and established more uniformity in the character and qualifications of teachers in theory and generally in practice; the incompetent and unworthy have been rejected, while the door has been opened wide for the admission of the meritorious and qualified, and a stimulus has been given to study and self-improvement. It is the great medium of connection between the department and the schools; and while it has produced unity and harmony of action between them, it has secured to the system power and efficiency hitherto unattainable. It has excited enlightened and zealous friends of education who have no official connection with the system, to renewed interest in its success; and bright hopes for the future are now entertained by many who had watched its uncertain existence and doubtful usefulness, with fears of its ultimate decay and abandonment.

The office is opposed by many who judge of every enterprise by the money it may cost, without regard to the results anticipated from it; but by far the fiercest opposition comes from those who are opposed to the cause of popular education at the public expense, and who strike at the vitals of the system through the office of County Superintendent.

GREAT WANT OF COMPETENT TEACHERS. In referring to the defects and wants of the system, the leading feature of every report emanating from this Department to the Legislature for twenty years, is the want of a sufficient number of well qualified teachers. It has been annually deplored as the great want of the schools, and obstacle in the way of progress. To supply the schools suddenly brought into existence all over the Commonwealth, with teachers qualified to discharge their duties, should have been the first step taken in the establishment of the system.

EFFORTS OF TEACHERS TO ELEVATE THEIR PROFESSION. First, school district associations were formed for mutual improvement. The eminent success of these soon created county societies, and county societies were elevated into the importance of Teachers' Institutes, with sessions of a week, exciting the sympathy of the friends of education and the emulation of the members; and, as the consummation of this spirit, during the past year in several of the counties of the Commonwealth, these institutes were followed by Normal establishments for the education of teachers, holding their sessions one, two, and even three months.

Teachers who work assiduously for four or six months, at the lowest wages for which they can be employed, should not be required to take from their scanty earnings money to defray the expense of three months' instruction in a Normal establishment, when they are fitting themselves for the discharge of duties in which the people are infinitely more interested than themselves.

The result of all these crude efforts for improvements by temporary expedients is, that they fall far short of the degree of skill and knowledge which the accomplished teacher must possess, before our schools can be expected to fill the full measure of their usefulness. Every good teacher; every intelligent board of directors; every locality, having had the experience of the improved methods of teaching from one of these Normal establishments, acknowledges this. They see that though much has been accomplished, much more remains to be done; and that no substitute for a regular professional training, extending through years, and embracing a complete course of study in all the branches necessary to illustrate those directly taught in our schools, can make the perfect teacher.

STATE NORMAL SCHOOLS. Normal institutions proper for the State, should embrace two departments: one for the improvement of the present teachers of our common schools, who may resort thither free of cost, for instruction and improvement during the recess of their respective schools. The other, a regular Normal department, into which young persons shall be admitted, to pass through

a regular course of professional training, for such a number of years as may be requisite to fit them for their profession. These two departments can and should be embraced in the same institution. They can be made to co-operate with each other, and hasten the great results contemplated. By the opening of the first, the present generation of teachers may be vastly improved in professional skill and efficiency; and the second will provide for a succession of teachers who will take their places when they retire from the scene of their labors, and who will raise still higher the standard of professional qualifications, to meet the growing demands of the age and the country.

COUNTY TEACHERS' INSTITUTES. The Teachers' Institutes now established, have contributed much to the improvement of teachers, and in elevating public opinion in educational interests. They have been sustained during the past year by the personal efforts and the severe pecuniary sacrifices of the County Superintendents and Teachers. Having proved eminently useful, they should be established in every county in the Commonwealth; they should be sustained by the government and assisted by appropriations of money from the public treasury.

The great success of such an experiment in the county of Chester, under a special act passed at the last session of the Legislature justifies and strengthens this recommendation.

SCHOOL-HOUSES. Under authority of the Superintendent, Mr. Burrowes has prepared a valuable work on School Architecture, with drawings and estimates, which will change the whole aspect of these edifices throughout the State.

STATISTICS. The following summary is taken from the Tables in the Appendix, and does not include the items from the City of Philadelphia—which would greatly swell the aggregates.

Population in 1850,	2,311,786
Number of children between 5 and 15 years in 1850,	583,414
Number of School Districts, (Towns,)	1,822
Number of Schools,	10,469
Number of Scholars,	539,024
Number of Teachers,	12,142
Salaries per month, male,	\$32,29
“ “ female,	\$14,89
Amount of State Appropriation,	\$159,554
“ Tax levied, for instruction,	\$1,364,937
“ “ to build school-houses,	\$266,198
“ “ for fuel, &c.,	\$110,383

We have read the reports of the County Superintendents with great interest, as well as the proceedings of the State Teachers' Associations for 1855, and 1856, and of the State Convention of County Superintendents—and from these sources of information it is evident that while great improvements have been made, and numerous and vigorous agencies are at work to extend and perpetuate these improvements, there is still evidence enough of small appropriations; of short school terms; of school-houses, old, dilapidated, inconvenient and unhealthy; of a large amount of irregular, and non-attendance of pupils; of candidates for teaching without the natural or acquired qualifications; of good teachers teaching without adequate remuneration and without parental sympathy and co-operation, and spending all their earnings in doing what parents or the public should do; of a great variety of text-books in the same study with pupils of the same attainments in the same school; of bad spelling, indistinct, and unintelligible (to pupil and hearer) reading, of mechanical processes in arithmetic, of a mere mechanical knowledge of grammar, of a confused kaleidoscope glimpse of the places and dates of history and geography; of schools without classification, without discipline, without results in the moral character and high aims of the pupils; of narrow, sordid, apathetic, belligerent parents; of scheming politicians who would pull down the whole system to make one round more in the ladder of temporary preferment for themselves. In the closing paragraph of the State Superintendent's Report we say:

When the common school system of Pennsylvania shall have unfolded its vast powers; when a corps of trained and educated teachers to supply all its demands shall have taken the field; when the text-books used in the schools shall be wisely selected, and the school-house built on the most approved model; when its protection and progress shall be the first object of the government—then will all its mighty agencies to do good be felt; the public mind refined and enlightened; labor elevated; patriotism purified; our republican form of government fixed on an immutable basis, and the people crowned with its benefits and blessings.

RHODE ISLAND.

Annual Report of the Commissioner of Public Schools, (Robert Allyn,) to the General Assembly, January, 1856. 254 pages.

The Report of the Commissioner, with the accompanying tables and reports of the School Committees of the several towns, throws a flood of light on the practical working of one of the best systems of public elementary Schools in the United States. Rhode Island had a population in 1850 of 147,545, distributed throughout 31 towns. According to the estimate of the Commissioner the population in 1855, was 169,813, with 39,011 persons between the ages of 4 and 15 years. The following are the results of the operations of the system for 1855, so far as these can be set forth in figures.

SUMMARY OF EXPENSES AND STATISTICS.

Amount of money disbursed by the State to the several towns for the support of common schools,	\$49,994.17
Amount raised by the Towns by their own votes,	62,564.89
Amount received by Towns from Registry and Military taxes,	7,923.41
Amount received from rate bills and district taxes,	11,721.11
Amount received by the towns from the income of other funds,	1,991.03
Amount expended on school-houses, in building or repairs,	16,001.56
Making the total, raised and appropriated, for Common Schools throughout the State,	\$154,614.40
Amount expended for instruction alone in common schools,	131,675.98
Amount paid for the support of the deaf mutes at the American Asylum in Hartford,	488.33
For the Idiotic and Feeble-minded youth with Dr. Howe, of Boston, and Dr. Browne, of Barre,	250.00
Amount paid out for lectures in different parts of the State,	500.00
Amount paid for Teachers' Institutes,	300.00
Amount paid for the State Normal School in Providence,	4,225.13
Expenses of the system of public instruction to the State, exclusive of the salary of the Commissioner, and the incidental expenses of his office,	160,392.86
Total number of scholars attending the public schools,	26,883
Total number of children of the school age, or between the ages of 4 and 15, is calculated to be	39,011
Average number of scholars attending school,	18,998
The cost of instructing a scholar on the average throughout the State,	\$4.90

And the cost of a scholar, according to the average attendance, is \$6.93, which is a discount of almost 29 1-3 per cent, or a loss of that per cent on account of absences, the vast majority of which are entirely unnecessary.

The number of teachers employed in the state is 679; 275 males, 404 females.

Average of teachers' wages is, for males, \$38.65, including board; and for females, including board, \$17.96.

Number of Districts in the State, 384.

Number of school-houses, 373.

SIGNS OF PROGRESS, AND OF THE NECESSITY OF GREATER EFFORTS. The sums raised by the towns are every year steadily increasing. Against \$62,564.89 raised by vote during 1854, for the support of schools during the school-year ending May 1, 1855, the towns voted to raise \$77,004.89, for their portion of the money to support their children at school the year ending May 1, 1856, which is an increase of \$14,400.40. The number of scholars in school is also greater by 1,015; but the average attendance is less by 908, a fact for which it is difficult to account. This shows a much greater disposition to appropriate money for the improvement of the schools, than to send the children to take advantage of

this increased liberality. The amount of money voted will, however, be found a very accurate index of the growing interest in the great work of education; and out of this praise-worthy disposition to enlarge the means of diffusing knowledge, there must soon grow up, in a community proverbially economical as ours is, a conscientious determination to reap all the benefits legitimately expected from the additional outlay.

It will be said, and much weight should attach to the remark, that many of the children between the ages of 4 and 15 are in private schools. While this is true, and serves to diminish the amount of "that barbarism growing up in our midst, by reason of the many who never attend school, or learn to read," it, by no means, speaks well for the democratic spirit of our citizens, or for the ability of common schools to educate the whole population. For if the whole number of children able to be in public school is not present, it must be inferred either that the parents lack the true public spirit to avail themselves of the means of educating their children provided by the people, and open to their common use; or that the schools themselves are still unfit for some classes of the community—for the rich and refined, or for the poor and destitute. The first named class may find, or pretend to find them unfit on account of the small number of branches of learning introduced, the meagre discipline obtained, and the unskillful manner in which their children are taught, or on account of the rude and uncouth manners there acquired, and the vicious and degrading influences of those with whom the pupils are daily compelled to associate. The second class may urge that they are virtually excluded by reason of the high price of rate bills and books, or by reason of the select character of the studies, the too exclusive attention to the higher branches, or by reason of the shame which children poorly clad are apt to feel in the presence of those who are well dressed. It is believed, however, that in our community it is, in truth, neither of these reasons that keep the children from the public schools. For the course of instruction will readily adapt itself to the scholars who come. If these are advanced and prepared for the study of the higher branches, these latter can be taught well and efficiently. On the other hand if the scholars are ignorant and backward, the course of instruction, by a necessary law, lowers itself to their capacities and standard. And if children, who are well disciplined morally and trained in neat and virtuous habits at home, compose a majority of the school, and the parents, the school committee, and the teacher are resolute in the performance of their duties, the school will necessarily become a nursery for similar habits and virtues.

CAUSES OF ABSENCE. The indifference and carelessness of parents and guardians is one very prominent cause, both of absences, and of irregularities in attendance—an evil little less damaging to the progress of a school than total absence. Again, the very profitableness of children's labor, and the necessity that, if these are engaged at all in labor, they shall be regular in the days and hours of their labor, has probably been a fruitful cause of absences, and of indifference to the means of education. This cause in the rural districts withdraws boys from the summer schools at a very early age, and by compelling them to do many of the chores in winter, has contributed to increase the irregularities shown by the School Registers. In cities and in manufacturing villages this same cause operates to withdraw all the children, or nearly all, from the school at an early age, so that in some of these places it is impossible to find a child in school above the age of twelve or thirteen. Besides these causes, the incompetence of teachers, and the repulsiveness with which a few still contrive to clothe the school-room, tend to make children invent excuses for absence, and to multiply trancies to an alarming degree. Too little effort is expended to make the school-house and school-exercises pleasant.

These almost inaccessible causes of absence and irregularities do, nevertheless, eat away the substance of our benefactions to our schools, and destroy, in the bud, much of both the beauty and profit of that harvest, which we have a right to expect from the seed so plentifully sown by us beside all the waters.

REMEDIES FOR ABSENCE AND IRREGULARITIES OF ATTENDANCE. To remove them we must not seek them directly in the places where they seem to work, but in some remoter source. We must call public attention to their deadly influence, and awaken the community to an intelligent sense of their danger. We must discuss before the whole people, and beget in the public mind a thoughtful sense of the responsibilities resting on the present generation, obliging them, as they love their offspring, and seek for their elevation and progress in everything good and noble, to see to it that every child be educated thoroughly—and educated, too, in the schools of the people. For let us distinctly remember that, in a country like ours, founded upon the acknowledged equality and privileges of all mankind, there can be no permanent and long continued prosperity, but in making the people, in some important sense, homogeneous. Nothing can secure

this but our system of common schools, and the legitimate operations of our common republican christianity, which is their foundation and support. Knowledge and virtue, joined with refinement and grace, are the greatest of agrarian levellers; levelling upward always—not downward, and ennobling also—bringing the son of the humblest and poorest, upon the platform with the richest and proudest.

In order, therefore, that the 48 2-3 per cent of our children who are in our public schools, may best profit by their education, and in order that the community may obtain from this education the greatest benefit, it becomes a matter of high importance that the other 51 1-3 per cent also obtain their education from the same common source. It may be said that they obtain a better education elsewhere. Grant that some of them, who are at the best and most costly private schools, do receive an education which is, in many respects, better; grant that in these private schools they are taught the higher branches, and the accomplishments which it would not be proper to introduce into our common schools; and these children are not so well fitted for the whole round of republican duties, as if a portion of their training had been in the schools of the people. But the great mass of this 51 1-3 either receive no education at all, or they receive it very inferior in quality, and very infinitesimal in amount; and the ignorance, which they thus nurse and diffuse among the others, works to the injury and detriment of every other member of the community. In a village where three-fourths are well educated, and the other one-fourth are untaught, and therefore somewhat vicious, every one of the well-educated pays a yearly tax for his neighbor's misfortune, greater than if he had been annually compelled to support him at the public schools during the whole of his youth. It is the whole commonwealth that ignorance and vice taxes, and nought but a common effort to educate, to moralize, and to render the community homogeneous, and a unit in all its interests and sympathies can remove or sensibly lighten this alarming taxation.

MANAGEMENT OF SCHOOLS SHOULD BE ENTRUSTED TO TOWN, AND NOT THE DISTRICT COMMITTEE. The school law provides that each town may manage its schools by the school committee, without the intervention of trustees. Were this the case, every district of the town would have the benefit of the counsels of the best men in the whole town; while under the system of district-trustees, some sections may be unfortunately located in respect to men, who are willing to undertake the office of trustee, and perform its duties. Were the town to manage all its district schools thus, by a central board or committee, there could be no possibility of a collision between those who hire the teachers and those who examine the candidates and visit the schools. The visitors would then always be informed of the times when the schools commence and close, and would feel more strictly bound to be present and discharge their very important duties as visitors and examiners. There would be less opportunity to favor relatives, and to foster petty neighborhood feuds, than under the present system of hiring by means of trustees. And, finally, the several parts of the town, and the children of all the parents would enjoy more nearly equal privileges, by a better distribution of the teachers, as to abilities and talents, than they can enjoy under any other system whatever.

Several of the towns have already adopted this practice, and it is believed that others would at once do so if they had the means of knowing its advantages. It would avoid many of the serious jealousies, now arising between the people of a district and the school committee, or between the teachers and committee; and could not fail to secure a much wiser outlay of the public money, as well as greater efficiency in the administration of the whole system.

CARELESS AND ERRONEOUS SCHOOL STATISTICS. No just distribution of the public money can be made by the school committee to the several districts without these are full, explicit, and accurate; and no correct and valuable conclusions can be drawn by the Commissioner, or by the legislative authorities without them.

TEACHERS' INSTITUTES. Two Institutes were held—one with thirty-eight, and the other with one hundred and thirty-nine teachers. The exercises at these gatherings of teachers consisted of reviews of school studies, exercises after the manner of the daily recitations, and drills suitable to be given each day in the school-room. Lectures and public addresses on the various modes and forms of giving instruction, and securing the attention of pupils, and on the motives and appliances to be used in stimulating children to love knowledge, and form themselves to habits of due obedience and order, were given by several gentlemen of distinguished ability, and were of that practical and eminently useful kind, that could not fail to leave a deep and a profitable impression on the minds of all teachers whose good fortune it was to hear them. It is believed that no money which the State expends for the benefit of its schools accomplishes a better service than that appropriated to defray the expenses of these Institutes.

To keep the teachers, on the road of progressive improvement, in their own

personal character and habits, they must, like any other profession, be able to have frequent meetings, for discussing among themselves the great principles that lie at the foundation of success in their work. They must often, or at least sometimes, be brought in contact with the leading minds engaged in the same holy calling and drink in their spirit. They must, in some way or other, be enabled to see new methods tried, and to hear new theories, if such there be, propounded and examined. They must not always read, and study, and experiment in solitude; but must come into personal contact with others, and learn how they have studied, what they have read, and how their experiments have succeeded or failed.

It seems highly proper to suggest that the State, by its legislature, or that the several town committees, ought in some way to grant privileges to those teachers, who give up their time for a week, and cheerfully pay their expenses to and from these gatherings, in order that they may become more useful in the school-rooms where they shall hereafter labor. This consideration might be given in time, as is proposed in the State of New York, where a week spent at an Institute, and certified to by a county inspector, shall entitle the teacher to draw the wages of an extra week, from the treasury of the district where he shall be employed; or it might be in the form of a higher certificate, which would carry with it assurances of greater zeal and enthusiasm, if not of greater literary and moral qualifications.

STATE NORMAL SCHOOL. The success of the experiment in organizing and sustaining the State Normal School, in the city of Providence, has been very gratifying to the friends of the measure. The teachers have been models for their profession, and they have successfully accomplished a work for which they deserve the gratitude of the State.

It went into operation on the 29th day of May, 1854, and has since that time been well patronized and highly useful. The number of students admitted by examination has been one hundred and eighty, one hundred and six of whom have left the school—most of whom are now engaged in teaching in some part of our State.

The course of instruction at this school is not designed very materially to extend the scientific knowledge, which its pupils are expected to have gained elsewhere before they enter its walls. It consists in the larger part of thorough reviews, in the exact manner of the ordinary school recitations for scholars in our common schools, of the common branches of English studies. Thus each recitation becomes not only a lesson for the scholar to learn and recite, but a practical example not only of what he must teach in his own school hereafter, but an illustration of the method in which it must be presented to his classes.

The effect of the graduates of the Normal School is already felt to some extent for good upon the teachers of the State. They have gone abroad into various schools, and by coming in contact with other teachers, and by making popular the methods of instruction learned in the Normal School, they are gradually but surely causing the standard of attainments in school teachers to rise, as well as the standard amount of duty they shall be required to perform. If such an influence begins to be apparent within two years from its commencement, we may with certainty expect that its benefits will constantly increase till all parts of our State shall feel it, and be made better thereby.

COUNTY INSPECTORS. The law authorizes the Commissioner to appoint in each county, certain County Inspectors, who may grant certificates of qualifications to teachers, and may also visit schools, and make report to the Commissioner; but the law does not very strictly define their duties, nor allow them any compensation, or even any authority. During the past year an attempt was made by means of meetings and consultation among the Inspectors to find out ways of making the office much more efficient. It is very apparent that if the schools of any county, or a few adjacent towns only, were visited by a single competent person, great good would result at once.

There might thus be diffused through a whole county, the valuable suggestions and experiences of long tried teachers and overseers of schools, and the effect of this might be felt at once in every department of the work. If a sum of money were set apart for the visitation of the schools of the State, it is believed that it would do more to introduce uniformity and efficiency into our system than any other measure that could be adopted.

Our schools are now so various that the advantages of the children of the State are by no means equal. By looking over the tables it will at once be seen that a scholar in Providence can enjoy the advantages of a master worth \$100 per month, or of a female teacher worth \$23 per month, while in Kingston the children of the State must be content with a master at \$25, or with a mistress at \$15. The children of Kingston need an education as good as the children of Providence, for they will many of them remove to Providence, and do the business of

that city. And the State apportions its money in part according to population, and in part according to the number of districts, so as to equalize privileges as nearly as possible. A less amount of money will give as good schools in Kingston as in Providence. But in order to produce this result there must be as good and as efficient supervision, and as much intelligent study and comparison with the schools of other places.

PARENTAL CO-OPERATION. There is great danger, lest while we provide by law for the support of schools, and make them free to all who are unable to pay the pittance of tax required, we at the same time emphasize so little the parents' duty in connection with the education of his child, as to leave those who reflect superficially, or who scarcely reflect at all—(unless under the stimulus of some active discussion or exhortation)—to suppose that they have no other duty in the matter but to provide school-houses and books for the children, to supply them with clothing, and to allow them the whole or half of the six hours' daily time allotted to the school. No more harmful notion could be lodged in the minds of the members of a community; and it can breed nothing but mischief. In order to have the school perfect, there must be certain previously existing conditions.

A healthful tone of public sentiment must be maintained in relation to the amount of time allotted to the children attending school, for their studies at home. There must be, in some sense, a mutual understanding among parents as to the studies proper to be introduced into the school-room; and some general consent as to the punctuality of the scholars, and as to the uniformity of the time of their arrival at the school-room. There must be a tacit agreement, at least, as to the authority mutually devolving on the parents and on the master, to see that children come and go directly to and from the place of school, as well as to whose business it is to note and to attempt to prevent altogether the little trunancies so liable to occur, especially when the sports and pastimes of boys are unusually tempting. If a neighborhood has not, in some way, settled these important matters, and arrived at some well defined and accurate notions and principles of action, the best school will always show numerous occasions for disorder, or for loss of time and idleness on the part of its scholars. And teachers, in their meetings, in their associations, in their institutes, in their magazines, and in their daily intercourse with parents, guardians and others, may discuss and lecture, may exhort, entreat, reprove and argue, as much as they please, and still the evils can not be cured. The simple truth is, the evil lies away from the sphere of the teacher's influence. As a teacher he can not touch it. All that he can do to remove it, he must do as a citizen, or as a member of the offending or neglecting community. While he is a teacher, he has other duties, and must perform them. This work of manufacturing such a public opinion, of organizing the necessary conditions of good schools, belongs to every member of society, and a portion of it devolves upon every parent, however humble, or poor, or distant from the school-house, or however illiterate, or even debased.

OUTWARD AND INWARD ADORNMENTS OF THE SCHOOL-HOUSE. Parents must see to the school-house—that its internal arrangement is excellent, and that it is, at all times neat, and well supplied with maps, blackboards, chalk, brooms, dusters, and every necessary appendage for hanging cloaks, hats, bonnets, and for securing books, &c. It should be a delightful room, and in place of the naked walls, innocent of all attempt at ornament—except it may be the literal "charcoal sketches" of some rule-minded boy—there might be good and tasteful engravings; a few of which, at a small expense, might adorn every school-room. How elevating and how transforming would be the influence of such an engraving as a portrait of Washington, or of one of Cole's beautiful pictures; the "Voyage of Life," looking down, always like the descent of the Holy Spirit, upon the young souls of the scholars! They could not look upon these noble things, with their honest and penetrating eyes, without opening their yearning hearts wide to receive the divine beauty of Truth, and Honor, and Virtue, that glows and almost burns in sublime works of art. It may be said that the scholars will not respect these, but will damage or destroy them, and thus encourage the spirit of recklessness, wanton mischief and destruction. But this has not been found to be the case where they have in some degree been introduced and cared for. The teacher can do something to produce such a state of things in his school as shall make it safe to introduce such ornaments, but it is the people of the district that shall elevate the general public sentiment, and shall make it necessary to obtain them, and preserve them from harm.

Again the people of the district can plant trees and shrubs about their school-house, and they alone can induce their children to avoid doing injury to their young and flourishing beauty; and thus make the spot to which their children

shall daily resort, a place crowned with all earthly loveliness and grace. There is, we know not why or how produced, an influence in the outward surroundings of childhood, that moulds and fashions character. The aspects of nature, the works of art, that the infant mind looks upon—that his heart clings to—have an almost omnipotent power to make his tastes; and these tastes of his are so closely akin to his moral moods as to do much toward making him virtuous or vicious. If, therefore, parents and the inhabitants of a district would secure their children as much as possible against the early and more insidious approaches of vice and crime, let them all combine to make the school house a "thing of beauty," and therefore to the young scholar "a joy forever." Let it be a spot that in his memory shall never become dry and barren of delightful associations; but a spot where unfailing springs of purest thoughts shall always well up; a spot the thoughts of which shall in the remotest years not only bring to him a remembrance of childlike innocence, but which shall even, in the midst of a career of sin and crime, remind him of truth and holiness, and tend to call him to a sense of honor and duty.

LECTURES ON EDUCATION. The State now appropriates annually from its General Treasury the sum of five hundred dollars to defray expenses of lectures and addresses on the subject of public education and common schools in different parts of the State. Rev. Mr. Vail, of Westerly, and others, have been paid for lectures in all the counties except Bristol county, and it is believed that the influence of these lectures has been very satisfactory.

WANT OF SUITABLE TEXT-BOOKS. The subject of text-books is a fruitful one both of annoyance to teachers and of expense to parents. Perhaps all the other sources of complaint put together are not so fruitful of ill feeling and so really injurious to the improvement of our schools as this one alone. Scholars come to the school-room, with each an old book, different from any other book on the same branch of study in the whole school. Readers are quite as numerous as the classes, if not as many as the families in the district. A half dozen sorts of Arithmetics give a great variety in the examples for practice, and in the mode of carrying on the numerical operations. There are almost as many Geographies as pupils in the study—some of them with atlases, some without them, some of them of very recent date, and others of them having served the fathers and mothers of the present generation of scholars. As to Grammars, Murray still holds his place in some schools, in the midst of a whole host of reformers, who quarrel with him and with each other. While Spellers and new Spellers, Definers and Revised Definers, are as plenty as the frogs were in Egypt, and quite as vexatious. And smaller books, Primers, and Improved Primers, Child's First Books, and Children's Pictorial Primers and Readers, all crowd into the peaceful arena of the district school, to do over again "the battle of books," and re-introduce the confusion of Babel, without the possibility of a Babel-like dispersion. But still another difficulty arises from the multiplication of new editions of the same book. A very popular school-book, to name which would be easy, has passed through not less than eight changes within the last ten years; and it is almost as impossible to use in the same class any two of these, as it would be to use books by different authors. Thus we find several versions by each of several authors on almost every branch of school study, and in many cases the disorder is multiplied by first, second and third edition, revised and enlarged, of each of these versions. How can scholars be graded and classified, and be made to move on at an equal pace, and with pleasure, rapidity and uniformity in such a state of things as this? And how can a teacher who enters such a school to remain only four months, be expected to do much for his pupils' advancement in knowledge?

It may appear to be almost a betrayal of confidence to allude to the very distressing state of things in some of the schools by reason of the want of books really fit to be used. No scholar can successfully study his lessons and pursue his tasks with real interest and satisfaction to himself or to his teachers, unless he is supplied with books in which he can find the whole of his lessons, in reading, spelling, and reciting. It should be a part of the school committee's business to see that parents do not thus defraud their children of the means of acquiring a perfect education, provided for them by the commonwealth. The law provides, and ought to provide to the very poor, the means of purchasing text-books for their children at the expense of the town treasury, and if any parent who is able to purchase for his children neglects his duty, the school committee ought to have the power to order books for his children, and hand the bills over to the collector of taxes to be collected as the ordinary taxes of the town and State are collected. The truth is, that in a large class one scholar unsupplied or ill-supplied with the proper text-book, will be a serious drawback on the whole class for the entire term of the school. He will be a broken wheel in the midst of the other-

wise perfect machinery, and will, in spite of all the teacher's labors, be a clog to the end of his work. The law ought not to allow the avarice or poverty of any single individual, or of any number, thus to impede the progress of all.

What then can be done to secure at once economy to the parents in the expense of buying books, and uniformity of authors and editions in the schools?

Some very obvious methods, aside from any change or addition to the school law, at once present themselves. One is for each town to secure the services of a school committee, firm, intelligent, judicious, and thoughtful, and to continue them in office from year to year, giving them instructions to secure uniformity of books in *all* the schools of the town, and also instructing them not to make a change in the books they may select, without a vote of the town, until they have been used at least three or five years. This would suggest the propriety of greater care in examining before a book is introduced, and it would conduce to permanence in the usage; while at the same time it would prevent the so frequent, the so impertinent, and the so unprincipled intermeddling of book agents with the school committee's business. It would also be a stimulus to the visitors and examiners of schools, to insist that all the schools in town, when public—(no matter how it might be while they were private)—should use the prescribed books. This would be a great step in the right direction, and would add vastly to the efficiency of our school system.

Another measure tending to the same end, and almost identical with the one already named, would be to place all the schools of the town directly under the charge of the school committee, according to the 19th section of the school law. The committee would then hire all the teachers, examine them all, converse with them, visit their schools, and, in short, control the whole of their operations. The schools would then of course easily be made uniform in many things where uniformity is so profitable.

Another method, adopted in some towns, is for the town to appoint an agent, who shall purchase and take charge of the books for the schools of the town. These books are then loaned to the scholars, each one paying, or the town paying for him if poor, a small sum as an entrance fee, for the use of his books. Thus the town owns all the school books, and receives pay for them by this small term-tax. In such circumstances the temptation to change is comparatively small, and the cost to parents is uniform and insignificant. If every town in the State would adopt this mode of supplying its schools, but little more could be desired.

It can hardly be doubted, but that the cost to the whole people of the State would be much less, if the books were all bought by the towns, or by the State itself, and the money to pay for them raised by tax on the property, and complete uniformity required in all the schools, restricting changes to particular times in each of the school studies. Then, if it were thought best, an admission fee for the use of these books, could be taxed upon the scholars, and those unable to pay could be relieved from it by order of the school committee, and their fees paid out of the town treasury. As families so often move from one town or county of the State to another, some system which should secure uniformity throughout our whole territory would, of course, be best for the entire community. This would relieve many of the school committees and teachers from the almost intolerable nuisance of such book agents as travel about to find fault with every treatise on a particular topic, except the single one of which they happen to be the venders. Book agents may have accomplished some good; and new authors by their zeal to distribute their works, may do something to keep alive an enthusiastic and an awakened attention to new and improved modes of presenting each topic of school study. But this is when they are engaged about their legitimate business of removing the very old, imperfect, long-used, and therefore uninteresting books. On the contrary, where they attempt, for the sake of their own emolument, to remove from the schools books lately introduced, and of acknowledged merit, simply for the purpose of introducing their own, they become real nuisances, and their pertinacious persuasions are among the most serious of those annoyances that beset the life of a school officer.

REPORTS OF SCHOOL COMMITTEES SHOULD BE PRINTED. The law obliges the school committee of each town to present an annual report to the town meeting, of the state of the public schools for the year then last past; and it requires that this report shall either be read in open town meeting, or that it shall be printed for distribution throughout the town; and the law allows the school committee to reserve a sum not exceeding twenty dollars for the printing of this report. This sum is not generally sufficient to print and distribute as full a report as ought to be made, but it is believed to be as large as any general law of the state should authorize. The towns, however, in some cases, have paid for printing the school committees report out of the ordinary revenues of the town, and this is undoubtedly the proper way.

This report ought to go into the family whence every scholar comes, and should be then read by the mothers, by the elder sisters and brothers, and by the scholars themselves. The teachers ought to see it. And it ought to be sent to every other town in the State, and often to towns in other States; and thus it would bring back in exchange a large variety of valuable statistical and useful information, which could not fail to suggest useful improvements to the committee. The amendment to the law passed at the May session, 1855, obliges each committee to transmit to the Commissioner of Public Schools a copy of their annual report as well as the returns.

MORAL INSTRUCTION. Unless the attention of school teachers and school committees is called to this important element in our school education—instruction in the elements of practical morality—we may well fear that no power can save our population, educated in the schools and made keen-sighted, from being more potent for evil than for good. It would be well for us to recur to the fundamental principles of a good education and re-enumerate them, and if need be, re-classify them; putting virtue and obedience to law above mere intellectual acumen or brilliant genius, and forming the ideals of excellence for our children's contemplation on the models of upright goodness, and patient continuance in right acting, rather than on the amount of honor or emolument gained.

That it is a State's duty, and the true object had in view by any system of public education, to make a virtuous population, will hardly be doubted. Indeed, the expenditure of the public money for any system of state schools, can scarcely be justified on other grounds than those of self-preservation, and the duty to promote the general prosperity of the commonwealth. Ignorance does clog the wheels of enterprise, and fetter the steps of all improvement; and when men unite into a community they do it partly from an uncontrollable instinct of their natures, and partly from a desire to possess and enjoy certain advantages and privileges which in a solitary state they could never have had. They must then, after they have thus united, seek, by all lawful and proper means, to preserve their union, and to promote most successfully the ends desired. They have therefore a right, nay, it becomes their imperative duty to encourage the spread of intelligence and the repression of ignorance. But ignorance is not, by a hundred-fold, so deadly a foe to the quiet and permanence of a society as is vice; and hence the duty of the state to suppress this most destructive of monsters. The penal laws all proceed upon the supposition that it is a solemn duty to punish the overt act of crime and vice. Is it not then a duty to prevent these? And this can be done partly by education, if that education embraces suitable subjects, and is imparted in a proper manner. The right of a community to take measures for its own self preservation, therefore implies, and carries along with it the duty, to educate its children, and save them from both ignorance and vice—the one of which benumbs and stifles, the other of which corrupts and blights, whatever might be good and noble.

To make our schools then what they are intended to be, the conservators and stimulators of all goodness and enterprise, they must be made redolent of moral influences; they must be at all times filled with the all-pervading presence of virtuous instructions. It must be the teacher's duty to study daily in what manner he can best form his scholars to the manners of good, law-abiding citizens, and brave-hearted, energetic defenders of the weak and defenceless. He must remember that no external ornaments of learning—no mere polish of refinement—can atone for the possession of a debased and an unworthy soul. We must insist on this high unsectarian moral instruction in all the school rooms which the state sends its money to support, and its officers to oversee. We must insist that a moral character is the first requisite in a teacher, and that an ability to teach the same morality, is a matter of higher importance than any amount of merely secular knowledge.

BOOKS OF REFERENCE IN EACH SCHOOL. Every school room ought to have a large and correct Atlas, or a set of well prepared Maps and Charts—such as are in use among men of business, and a well digested and arranged Gazetteer. No money could be better used than a small sum expended to procure for every district school an Encyclopedia, and a Dictionary of Arts and sciences; for these would show something of the extent of the world of knowledge to which the school is designed to introduce the pupil, as well as the mode of consulting original sources of information, and would form his mind to habits of diligent investigation, and to habits of independent and self-reliant thought. And the grand object of all education, both in the school room and out of it, is to elevate and confirm in strong, intelligent and enterprising truth and goodness, the soul of every person in the community. These would not be used for the ordinary purposes of recitation, but for reference in the reading lessons, in the arithmetical problems, and in

the general exercises of the school. The scholar would then learn how to use these things to verify the assertions and statements of his school books, and to correct and supply their deficiencies, and thus would be doing exactly what he will be called to do almost every day in his future life.

Besides these books, there should be in every school room a full and authentic standard Dictionary of the English Language, and the scholars and teachers should make daily and hourly use of it. This is as necessary as a blackboard and chalk. It should be used to explain the meanings of words, to settle disputed questions of orthography and pronunciation, and to stimulate inquiry and to secure and encourage accuracy in all things. The Commissioner feels no hesitation in saying that no Dictionary yet published can sustain a thorough comparison with that of Noah Webster, revised by Professor Goodrich, of New Haven. There should also be in the school room, and easy of access to all, a good Biographical Dictionary, and this would be found especially useful as a teacher of a noble practical morality by examples—that method of nature so pleasing to all—so profitable, especially to the young. These Maps, Charts, Atlases and Books of Reference ought to be indispensable appendages to every school room. And it is believed that it as much the duty of the State to aid its rural schools, and its city schools in procuring them, as it is to aid in giving to these same schools good school-masters.

If these were bought by the State in a quantity sufficient for all her schools, and were sold to such districts as would pay the one-half of the wholesale price, the actual expenditure on the part of the commonwealth would be comparatively trifling, and the benefit would be incalculable. It would be just such a measure as would infuse new vigor and energy into the cause of education. It would instruct the teachers in a new and a fresher method of teaching. It would give a new direction to the thoughts and to the studies of the pupils. And it could not fail to make our system of education conform more exactly to the wants of a practical life.

PUBLIC SCHOOLS UNDER A DESPOTIC AND A REPUBLICAN GOVERNMENT COMPARED. In Prussia, [and to some extent in every European country] the government prescribes the books, fixes upon the studies of the classes, insists on marking out the duties of the teacher, and decrees the proper mode of religious services at the opening and closing of the duties of the day. In this way the means or privileges of education are provided for the people, who have no other care than simply to see that the children are fed and sent daily to the school. The officer, responsible to the central government, paid by it, instructed by it, and making his only report to its head, takes care of everything else.

The policy of this country is to leave it as much as possible to the people themselves. Hence the highest authority that presumes to lay its hand upon the means of educating the people is the State Government; and this touches it only as the people themselves direct. And even this government gives very properly and very philosophically the whole power of managing, conducting, and bringing to perfection these schools or this education, to the people in their municipal capacities as towns or as districts. Thus the whole necessary and essential work of education falls entirely upon the people, in their minutest and most original assemblages. All this implies the necessity that the whole people—not some few far-seeing and philanthropic men—shall have some correct and definite notions of what the school is designed to accomplish, and also of the best and most direct manner of accomplishing that object.

WHAT IS EDUCATION? The word Education is the highest of a series of terms all implying something in common, yet expressing very different ideas. The word improvement is used of whatever grows gradually better, as of fruit, of a field, of stock, or of a man. We use it where the thing in itself, either with or without foreign assistance, so changes as to be reckoned of a better quality, or of more worth than formerly. The term cultivation has an import somewhat more dependent on a foreign agency. Thus a field is cultivated—an inanimate object made better by an extraneous agency. We speak of training a dog or a horse. This is where the object is intelligent and has a will of his own. Then when he becomes better fitted for another use, we say we have trained him. Again we speak of disciplining soldiers, and we mean that we so exact obedience and orderly movements, as to compel beings with free wills to move with the regularity of machines. But education, in some sense, includes each of these, embracing improvement, cultivation, training, discipline, and instruction, together with a higher idea super-added—of self elevation developing individual characteristics.

THE RHODE ISLAND SCHOOLMASTER. The Commissioner of Public Schools, assisted by the Principal of the Normal School, and other teachers, publish a monthly periodical devoted to the subject of present and constant interest to the schools and the family.

SOUTH CAROLINA.

In the absence of any official or legislative document respecting the "Free Schools" of South Carolina, we introduce copious extracts from a "*Speech of C. G. Memminger, Esq., on the occasion of inaugurating the Common School System, at Charleston, July 4, 1856.*" This speech announces the beginning of an important change in the school policy of Charleston, and if successful, as it will be, if properly sustained even for a single year, in the school policy of the State. The change is from a system of schools, if not avowedly, at least practically for the poor, to a system of schools for all classes, the rich as well as the poor—from pauper to public schools. It is the same change which is now going on in the public schools of Norfolk, Savannah, and Mobile, and which has already taken place in the schools of New Orleans, Memphis, and Nashville—a change by which the public schools of all the large cities of the United States, in the North and the South, in the East and the West, are beginning to assume the same general features, and exhibit the same gratifying results—schools in which the children of the rich and the poor are enjoying the common advantages of the highest intellectual training. These schools are not perfect even in cities, where the system has been in operation for the longest period, and under the wisest administration and the most liberal appropriations, but they constitute the most satisfactory portion of our American system of Popular Education, as we shall have occasion to show in a review of Public Schools in the large cities of the United States, similar to that which we are now giving of the State systems.

We cannot better exhibit both the old and the new system than in the words of Col. Memminger.

As far back as 1811, our State announced the proposition that every citizen was entitled to receive from the State the benefits of education. A fund was provided for this purpose, but at the same time it was enacted that if it should prove inadequate for all applicants, preference should be given to the poor. This enactment has, in my opinion, been the cause of the failure of the system. The fund originally provided was small, and was entirely absorbed by the preferred class. The rich were thus excluded, and, the benefit being confined to the poor, the schools degenerated into pauper schools, and pupils and teachers descended to the grade at which they are now found throughout our State.

No one, unless urged by necessity, would accept an education which could only be granted as a charity. The middling classes of society were unwilling to stigmatize themselves by a declaration of pauperism, and the result has been here, as everywhere else, that schools for the poor have signally failed in the main objects for which they were instituted.

Within a few years, the State has endeavored to remedy the evil by increasing the fund. But although this has widened the access, particularly in Charleston, yet it has not reached the true source of failure. It is vain to look for substantial improvement, while at the entrance of the school, a confession of pauperism must be made. Try the same experiment with any other educational institution. Let it be required that no young man shall find entrance into the South Carolina College, but upon a declaration that his parents are unable to educate him. Such a regulation would be fatal to its existence—its whole tone and character would be destroyed; and if enough of those who could receive such a bounty, could be found to secure the continuance of the college, they would soon lose consideration in the community, and professors and students would descend by the same steps which the Free Schools of the State have taken.

The speaker states that while successive Governors, and representatives in the Legislature from all the rural districts in the State, pronounced the system a failure, Charleston was generally excepted; but on examining into the condition of the schools on his appointment as Chairman of the Board of Trustees of Free Schools, he was obliged to pronounce against the exception. "I found the boys themselves, as well as the community, holding the schools in disrepute, and the grade of education so low that the most inferior private schools stood higher in public estimation."

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The remedy which we propose to apply is no untried experiment, no Utopian theory. We do not profess to have discovered any new system of education, or to have invented processes which dispense with the old beaten paths of industry and perseverance. There is no royal road to the treasure-house of science, but there are appliances, aids, guides, which will keep the youthful votary in the proper path, and will encourage and direct his labors. We propose to introduce a system of public instruction, which has been perfectly successful wherever it has been tried.

By an act of the Legislature, the Board of Commissioners is authorized to levy a tax of about \$10,000 upon the citizens of Charleston for the erection of school-houses and other purposes connected with education. With the funds thus raised, the board have erected the school-house in St. Philip's street, in which they propose to introduce the system of common schools. The building will furnish accommodation for about 700 children. On the first floor is the primary department for children of both sexes under nine years of age, who are to be taught the first rudiments of education. On the second floor is a grammar school for girls, in which the education of girls is continued to the highest point of English education reached at the private schools, with needle work and singing. On the third floor is a grammar school for boys, in which the higher branches of English education are taught. The house is so arranged that there is no communication (except for the teachers,) between the boys and girls departments. The whole establishment is under the control and superintendence of a male principal, who has separate charge of the boys' grammar school, with a corps of teachers under him. The girls' grammar school is under a female principal, with a corps of teachers under her; and the primary in the same way, is under another female principal. Each department therefore, while enjoying the benefits of the skill and experience of the male principal, is conducted with the energy and advantage of separate schools. And it is apparent, that whether the building be used for the new system or the old, it is an economy of the public funds to make a single building serve the purposes of three.

Into this school the board propose to invite our fellow citizens to send their children in common, without distinction of class, that there shall be no discrimination between rich and poor, and that the same thorough education shall be given to all the children so long as they remain in school.

After showing the expense of supporting this common school, over the amount received from the State appropriation, (\$75,000,) and realized from the tax authorized by law, will not be great, the speaker proceeds to set forth the advantages of the new arrangement.

1. It will extinguish the causes which degrade the existing schools. If the middling and better classes of society come into the schools, this alone will at once elevate their tone, and, by affording a higher grade of attainments, stimulate both pupils and teachers. Instead of having the school emptied of its pupils to go to trades as soon as they can read or write, there will remain a class of pupils who will continue at school until their education is complete. The teacher will have before him an object worthy of honorable ambition, in advancing those pupils, and the pupils will have constantly before them others more meritorious still in the advance, urging them on to energy and perseverance. The whole cause of education will thus be advanced in every avenue.

So, too, the private schools will be compelled to keep in advance of the public. The teachers, as a class, will be affected by this same impulse, and their characters and attainments become more closely examined and appreciated.

2. Such an association between the rich and poor tends to produce a better feeling in the community, and is more in conformity with our republican institutions. The children of the rich are rescued from that spirit of self-will and arrogance, which deference from servants and dependents produces, and to acquire at an early age that consideration and respect for the opinions and feelings of others which is so commendable in any character. On the other hand the poor are cured of that spirit of envy and jealousy which is apt to be engendered by the perception of benefits enjoyed by others which are denied to us, more especially when these others repel and forbid their approach. All classes of society by this means soon learn to estimate each other not according to external circumstances, but according to intrinsic worth. The boys who meet at school lose sight of everything but each other's position and proficiency in the school, and merit takes its place just where it should. If you would see an exemplification of this, look at any college in which the rich and poor come in promiscuously, and the effect upon the students is chastening and salutary.

3. It is a singular fact that under the present free school system the persons who pay the tax for education are excluded from any participation in its benefits. While

this may not be regarded by the few who have abundant means, yet there are many who are called on to pay the tax whose means are not much beyond those who are its recipients, and who may regard it otherwise. Nay, it no doubt often happens that those who receive the bounty are better off than those who pay. A conscientious and worthy parent, who is barely able to educate his child, may not feel at liberty to send to the public schools, whilst his less scrupulous neighbor may not hesitate to save himself the tuition of his children. Thus the system works injustice to both rich and poor. On the other hand, the common school equalizes the whole matter. It affords to the tax payer a participation in the schools; and if he pays more than his poor neighbor, he has the satisfaction of knowing that in the education of his neighbor's child, he is rearing a protector instead of a despoiler of his own property, and is increasing the productive capital of the State.

4. The common school system brings to its administration the whole strength of the community. When the children of every parent are brought into a common school, it becomes the interest and duty of the parents to see to its management. So long as the school is a charity, its recipients cannot complain; and the contributing part of the community feel too little interest in pauper children to go and watch their progress and the state of the schools. The result is that everywhere such schools are neglected. On the other hand, common schools become a great interest, awakening the attention of the whole community. The most efficient men are selected to take charge of them, and thus by a very simple process of self-interest, the great mass of the community derives an equal benefit.

5. It will be naturally asked, how is it that those common schools can give any better education than the schools now organized? We do not undertake to say that if a private school were organized with all the advantages of abundance of good teachers and the aids to teaching used in the best schools, that the public schools would afford a better education; but we say that very few private schools ever have been or are so organized. Those of us who are parents know that we are obliged, in a great degree, to be ourselves the teachers of our children, although we may send them to the very best schools. Others know that it is almost impossible in our city to get a first rate English education without taking with it Latin and Greek, whether it be desired or no. Now the common schools which we propose will relieve these difficulties, and at the same time will remove many of those which now embarrass the free schools.

The chief instrument by which this is done is the more perfect classification of the pupils. Take, for instance, the 200 pupils in the boys' grammar school; they can readily be divided into five classes of forty each. From so large a number as 200 a class of forty can be selected at precisely the same grade of attainments, so that a teacher can readily teach the whole number together. There are four class rooms on each floor of the school-house, besides the large room, so that five classes can carry on their recitations and be taught at the same time, without interfering with each other. Each school thus affords the advantages of five separate schools, and to far greater advantage. For it is obvious that in any other school, unless it should be classified as thoroughly, it would be impossible to have all the scholars engaged in recitations and class teaching at one time.

6. Another very great advantage derived from this system is the employment of a considerable number of young ladies as teachers. The higher moral instincts and the more refined taste of females, together with their patient and sympathising nature, fit them in an eminent degree for teaching the young. Men generally arrive at their conclusions by processes, while women, by a kind of intuition, reach conclusions which in matters of morals and taste are seldom wrong. In all teaching other than the exact and mental sciences, (if the latter may be so called,) women make, perhaps, the best teachers. Unfortunately for them, they have but few modes by which to obtain an honorable independence, and even this occupation of teaching has been taken from them. The consequence is that there is but little inducement to women in the middling classes of life to seek a higher education. We propose to change this; we propose to employ young ladies in all the lower departments, both for the boys and the girls, and in order to fit them for the occupation, we propose for the present to instruct them by the principal teachers; and, for the future, we propose to the State as part of a general plan, the establishment at Charleston of a Normal School for the education of teachers. This element in our common schools will enable us to procure teachers at a much lower rate than if we were obliged to employ men throughout, and will bring education everywhere within the reach of ordinary means. Not only will young ladies find employment in our schools, but whenever the system shall extend to the interior, (as it certainly will,) those who have been trained and have been found competent, will receive offers to become principals of new schools, and thus an object of honorable ambition will be offered to the young ladies of our city.

The speaker next proceeds to notice the objections made to the system of common schools.

First, it is urged that contact with the children now in the free schools, will contaminate those whom we invite to come in. Unfortunately for mankind, vice is not confined to class, and those who have been at school or college, have only to refresh their memories, and this objection will disappear. Who have been proverbially the bad boys or dissipated young men? Let every one answer from his own observation, and it will at once appear that riches or station furnish no security against vicious contact. At every school the danger must be encountered in some form, and experience has proved that it is not greater in common schools than in private. In fact, the numbers and the little opportunity there is for associations, render the danger less at these schools than elsewhere. While at the North, lately, I made much inquiry on the subject; for I confess that I had some apprehensions—not as to the contact between rich and poor—on that I had no apprehensions. I have seen enough of the world to know that the most senseless of all class distinctions, is that between rich and poor. The rich man of to-day, is the poor man of to-morrow. The wheel of fortune is ever changing, and the poor man's children are called upon to educate to-morrow the children of him that was the rich man of yesterday. My apprehension was not as to contact with poverty, for I had not forgotten that I had been once a poor boy myself; my apprehension was as to contact with vice. But the uniform testimony everywhere, was that the contamination, if any, was more apt to come down from above. Imitation is ever more likely to seek its original higher up the scale of society than lower down.

2. The next objection urged is that this system will injure the private schools. If by this it be meant that the private schools will be less profitable, in that they will be obliged at least to come up to the standard of the public schools in the conveniences afforded the pupils and in the grade of teachers, no doubt it is true. It is also true that inferior private schools must be abandoned. But no private school that keeps at or above the grade of the public school will be injured. The classical schools will maintain their position, but they must advance in grade and yield up English education to the common schools.

We sincerely pray that the following earnest and manly appeal to the good sense and good feeling of the people of Charleston will not fall unheeded, but that they will give the new system a fair trial. If this is done, we have no fear as to the result.

In spite of prejudice and opposition, we would renew our appeal to you, fellow-citizens, to give to this plan your support and encouragement. The school which we have opened already numbers 460 pupils. Extend to it your approbation, and it will soon be filled. We invite your aid not only in authorizing us to extend the system, but in giving us your children to educate. We wish the heaven afforded by the virtuous middling classes of society; we invite you to come in and see what is doing; and we intend to go on until our State is like the army of Prussia, in which no man could be found who was not able to read his bible or write his own name.

DR. DICKSON'S ADDRESS. We have since received an "*Address of Dr. D. S. Dickson*," p. 24, delivered on the same occasion, and advocating the same plan of Public Schools—"good enough for all." The Rev. Dr. Thornwell, when President of South Carolina College, addressed a Letter to Governor Manning, in which he remarks:

"It is clear from the face of it that the Act of 1811 was designed as the first step towards the establishment of a system of Common Schools, that should bring the means of elementary education within the reach of every child in the State. It was not intended to be a provision for *paupers*. Throughout our statutes *Free Schools* mean *Public Schools*, or schools which are open to every citizen. The first act in which I find the expression is that of the 8th of April, 1710, entitled an act for the founding and erecting of a Free School for the use of the inhabitants of South Carolina. This act created and incorporated a Board of Trustees for the purpose of taking charge of such funds as had already been contributed, or might afterwards be contributed for public instruction in the Province. In it the epithet *free* is synonymous, not with *pauper*, but *public*, or *common*. The same is the case in the act of the 7th June, 1712, entitled an act for the encouragement of learning. Although the School was a *Free School*, every pupil was required to *pay* for his tuition. But the meaning of the phrase is made still clearer by the extended act of the 12th December of the same year. There the School was manifestly open to *all*. Special inducements were held out to patronize and encourage it, and provisions made for educating a certain number free of expense.

VIRGINIA.

Report of Second Auditor (W. L. Jackson,) on the state of the Literary Fund for the years 1854 and 1855, and proceedings of the School Commissioners in the different counties. 126 pages.

EDUCATIONAL SYSTEM. The laws of Virginia provide for the education of the indigent children of the State under what is called the Primary School System—for the establishment of District Free Schools for all classes, by the council of any city or town having a corporate court, or by any county on the requisition of two-thirds of the resident voters—and for the support of a school of secondary education in the Military Institute, at Lexington, and of the University of Virginia, at Charlottesville. For these purposes a permanent Literary Fund has been constituted, amounting in 1855, to \$2,024,300.22 of which \$1,641,758.37 is productive, the income of which is annually distributed as follows:

To Primary and Free Schools for education of free children in 1855,	\$80,000
To the University of Virginia,	15,000
To the Virginia Military Institute,	1,500
Total,	\$96,500

In addition to this income the Constitution ordains that one moiety of a capitation tax, assessed upon white persons, shall be applied to the purposes of education in primary and free schools. The amount of this tax available for school purposes in 1855, was \$60,000—making the aggregate appropriation for educational purposes, including \$40,000 for the blind, and deaf-mutes, \$196,500.

The Reports do not exhibit the working of the system in detail. We glean the following items:

INDIGENT CHILDREN. For the year 1854 there were 3,042 schools in 88 counties, and in 117 counties and 2 towns, 41,608 poor children received the benefit of the school appropriations. The average attendance of each poor child was 63 days, and the average cost paid by the state, \$2.57.

DISTRICT FREE SCHOOLS. Nine counties and two towns have adopted the district free school system, for the education of all classes, the rich as well as the poor. The returns do not exhibit the number of schools, scholars, teachers, or the annual expense for 1854-55. The Report of the Second Auditor for the year 1853, states the attendance at 13,176 children, and the total expenditure, \$63,293.52, of which only \$6,519.80 were derived from the Literary Fund.

We have before us an "Address of Henry A. Wise to his late constituents," on resigning his seat in Congress, to enter upon his duties as Minister of the United States to Brazil—from which we make a few extracts as indicative of the direction which, as Governor of Virginia, he will endeavor to give to the educational policy of the Legislature.

TAXATION AND EDUCATION. If I had an archangel's trump—the blast of which could startle the living of all the world—I would snatch it at this moment and sound it in the ears of all the people of the debtor States, and of the States which have a solitary poor "unwashed and uncombed" child, untaught at a free school—"TAX YOURSELVES."

For what?—

1st. To pay your public State debt.

2d. To educate your children—every child of them—at common primary free schools at State charge.

That is my legacy of advice to you before I leave my country's shores, to return, perhaps, no more forever.

Distrust all attempts to disturb the operations of a tax-bill already passed. Disbelieve any set of men who come before you with false promises of freedom from taxation. Listen only to those sincere friends who will honestly tell you

that you *must* be taxed, how much you ought to be taxed, and who will counsel freely and fully with you beforehand as to the mode and subjects of taxation. In a word, learn to *love taxation* as the only means of accomplishing such objects as those of paying the public debt, and of educating your children, rich and poor. See to it well that no revenue raised for legitimate purposes is wasted; see that it is all faithfully applied to the true ends of government, but be sure to raise enough and amply enough for every end of state necessity, usefulness, and honor. There is no easy mode of taxation, no royal road to paying debts or to education. Industry, honesty, economy and education alone can make you a free and happy people.

Educate your children—all your children—every one of them!

STATE OF EDUCATION IN THE CONGRESSIONAL DISTRICT IN 1840. Do you know how education languishes with us, [in twelve counties having 37,230 free white persons, of whom 17,809 were over twenty years of age.]

1st. The fact appears that of the whole number of free white persons, nearly *one-eighth* can not read and write.

2d. That of the whole number of free white persons over twenty years of age, more than *one-fourth* can not read and write.

3d. That you have but 17 academies and 101 primary schools, making 118 in all, when you ought to maintain at least 259, leaving a deficiency of 141 common schools.

4th. That you have 2,628 scholars in your primary schools, and but 695 scholars in them at public charge; when you ought to have at least 7,448 children, at from 7 to 15 years of age, all at public charge in free schools, leaving 4,175 children of that age unaccounted for.

5th. That this number of 4,175 children of that age, presumed not sent to school, is nearly the precise number of adults, 4,514, who in this generation have grown up ignorant of letters.

6th. That this number of adults, 4,514, who can not read and write, exceeds even the number of voters, 4,379, in the District.

7th. That, allowing \$12.00 to each scholar, you are now expending but \$38,646 per annum for common schools, when you ought to expend the sum of \$69,376, leaving a deficiency of funds amounting to \$50,730 per annum.

8th. That this sum of \$50,730 must be raised and expended in some way to make the rising generation more learned than their fathers.

This is a lamentable condition of education among us. I would never have exposed it to the scoff or the pity of the world, but our own census-takers have already made report thereof to the Department of State of the United States, and Congress has printed these facts at public expense. I know that a very large body of our people is among the most intelligent, and some of them among the most learned of the country; I know how much credit and honor is due to some of our parents, who have not only rubbed nature's rust off their sons at common schools, but have polished their minds bright, not only at our own colleges and universities, but in the universities of Europe. I know what a body of well-instructed gentlemen we have, who would do honor to any society of any Athens in the land: how gracefully they live in all the means of the light of learning; what a venerable alma mater of great men we have in old William and Mary College; what a select corps of professors and teachers become our seminaries and academies; what a fine body of young graduates yearly come out from our own and the Northern schools; what an eminent professional corps, both in law and medicine, ministers to our minds as well as to our physical and pecuniary cases; what active industry, enterprise and intelligence there is among the great body of our farmers and planters and mechanics; I know how to account for much of the want of learning among our people from their geographical location—living, as many of them do, on islands and long peninsulas inconvenient to schools; and how much ignorance is to be attributed to the valuable labor of poor children whose poor parents can not spare their time at school, precious as it is, to procure for them their daily bread. I know all these consoling excuses, but still the fact stares us frightfully in the face, that more than 4000 poor children in our district are growing up in the night of ignorance. Most of these, doubtless, are female children, and the touching fact is presented that many mothers of the generation to follow will not be able to teach their sons and daughters how to read and write. We can not mend the present generation of fathers and mothers, but we may provide intellectual food enough, and to spare, for the health and happiness of those who are to come after us.

ERROR IN THE PRESENT SCHOOL SYSTEM OF VIRGINIA. The first and greatest error of our present system is, that it *proceeds upon the principle of charity*. Common school education should not be a *State charity*, but it should be the chief element of the *freedom* of the State. The poor man pays taxes, renders military

and civil service, is subject to fines, must obey the laws; and, in return, he should have the protection of the laws, the ordinary privileges of citizenship, such as the right of voting, and I say, *he should have his children educated as of right, free of charge.* And in all these respects the rich and the poor should be placed on precisely the same equal footing. There should be no distinction between the children of a republic. They are not in the school sense the children of their parents; but the State is *Parens Patriæ*, and they should all be regarded as the sons and daughters of Mother Commonwealth. The taxes, it is true, will have to be raised chiefly from the property of the rich; but at last the school revenue is distributed as funds of the State, and when with her liberal and equal hand they are distributed impartially to all, there is no feeling of dependence in any. They all alike look up to the benign State Mother for the mental bounty, all praise her only and love her supremely for it, and thus is laid a foundation of *amor patriæ* ever during, as the reminiscences of school-boy days, and fervent as the fondest recollections of life and gratitude can ever be in the human heart. As our system now is, in schools mixed of children whose parents pay for schooling them, and of those who are sent by the School Commissioners of the State, the child of charity is humbled by the comparison of itself with those who pay. The school is not pleasant to this child, and the pride of parents so revolts at the dependence and inequality in the school, that they often refuse to allow their children to enter. Whilst the school is free of charge, still it is not free. The true course is to make it free to all, make it the school of the State and let all her children come "without money and without price." Then no human pride will militate against education; but, on the contrary, every little "checked apron" will be "washed and ironed," and every little fly-flap bonnet will be stiffened and straitened for the "school parade." Funds and the universal free school are all that are wanting to enlighten every child among us and to array human pride on the side of the school.

PLAN OF VOLUNTARY SYSTEM. You need not, my friends, wait for the tardy action of our Legislature. If we wait for that, I fear we will wait forever. What then? Organize yourselves by counties and districts. All that you have need to ask of the Legislature is to pass an act for every county which will adopt a system for itself, incorporating for it a Board of Education with powers similar to those of the county courts for county levies and other purposes. Let this Board be elected biennially by the votes of all the male parents and guardians, having a member for every hundred voters, according to districts to be laid off by the Board.

Let this Board be required to levy taxes sufficient to educate every white child between the ages of 7 and 15 years, at common free schools, at the rate of \$12 per annum for each child; and allowing 30 scholars to each teacher; and to pay expenses of assessment and superintendence. Let it lay off the county in districts of 30 scholars, and one teacher to each district.

Let it have power to appoint one assessor to take annual census of the persons and property to be taxed for the school fund; of one collector of the fund to give bond and security; and one superintendent to visit quarterly each school, to take regular account of the system of teaching, of the number of pupils, and of the qualifications and conduct of teachers, and to make report thereof to the Board; with reasonable compensation to each of those officers.

Let this Board have power to fine, and to collect fines of parents and guardians, rich or poor, who fail and refuse to send their children or wards to some schools of their own selection. And let it meet quarterly or as often as it chooses, with power to pass by-laws for its own government.

PLAN OF STATE AID TO COUNTIES THAT WILL HELP THEMSELVES. For every county that will thus tax itself to educate itself, the State should, out of the literary fund, build all the additional school-houses required. It should do more, and what is all essential—it should take upon itself to furnish competent teachers, in a reasonable course of time, to every county in the Commonwealth. And this can easily be done. The university and the colleges, particularly, must be more liberally patronized. The universities and colleges are the fountains of good teachers. They must be upheld and encouraged, and the most munificent and beneficent mode of doing this, in my humble opinion, is for the State, out of the literary fund and by taxation, if necessary, to support at the respective colleges a number of our own Virginia youths equal to twice the number of Delegates and Senators in the Legislature; and to require these youths, when they have obtained certificates of competency, to teach in the primary and common free schools, at the rate allowed of \$12.00 for each scholar, as long as they have been maintained at college at State charge. Let them enter into indentures to the State, and then they will obtain their education, and will have worthily paid for it. Each youth of this description will cost not more than \$250 per annum for his board, tuition and incidental expenses.

The number proposed is 332, and the cost to the literary fund would be \$63,000 per annum. This would give to each university and college 25 State students, and distribute to each the patronage of \$6,886 per annum. This would give to the State in every term of three years, say, a corps of 332 competent teachers certain to be engaged in the work of tuition for a period of three years more, and shedding the light of their knowledge into every recess of the State, and exciting the thirst for mental improvement everywhere by their example, and when done teaching, abiding ornaments of the State.

The State, too, should furnish the books for the free schools; and should have two general superintendents, one for Eastern and one for Western Virginia.

AN APPEAL TO ALL CLASSES TO AID THE WORK OF UNIVERSAL EDUCATION. I call upon the learned Professors of William and Mary, and of the academies and schools—I call upon the reverend clergy, of every denomination—I call upon my brethren of the bar—I call upon the humane faculty of medicine—I call upon our most excellent farmers and mechanics—I call upon parents and guardians—I call upon women who would be the mother of scholars, philosophers, sages and great men—I call upon all ages and sexes—I call upon the rich man and the poor man, and upon men of all conditions—to stir, to “live, move and have their being” in this vital subject. Knowledge is power; it is the greatest of all power. It is the power which overcomes all *social* obstacles; it is the power which prostrates all *political* inequalities; it is the power which overcomes all *physical* obstructions in the way of man; castes and ranks and grades bow before it; wealth is impotent against it; it subdues the earth; and it humbles tyrants!! And if knowledge is power, ignorance is weakness—utter, impotent weakness. We say we were all born free and equal—that may be so. But, if we were born so, the state of freedom and equality does not last long in life if one man is to be cultivated in his mind, whilst the other is permitted to grow up in ignorance. How is the man who can not read and write, the equal in power of any sort, except muscular power, of the man of letters? No; ignorance among the People destroys the liberty and equality of the People: it makes inequalities in the social state; it gives one man a pre-eminence and preference among men over another in the political state; it makes the very weeds of the earth too strong for man's physical might to earn his bread; it makes the rich richer, and the poor poorer—the strong stronger and the weak weaker; it is the sycophant and slave of tyrants, and the foundation of despotism: it not only enslaves the citizen, but enervates the State. Does any one suppose that, if education had been universally diffused among our people, Virginia would have increased in the last ten years in white population some 20 or 30,000 only? That her agriculture and mechanic arts would be in the low state they are now in? That the rich bowels of her inexhaustible mountain mines of iron and coal would be undug and almost unexplored? That her manufactures would have languished as they do? That the Big Bend of the Ohio river would not have been tapped long ago, and that the mighty Miami country, and an interminable back country besides, would not, ere this, have built us an Eastern city to consume our products at home? That emigration would have flowed from us to lands not half so precious, to homes not half so sacred? Oh! my friends, the theme is full of facts, figures, and feeling!

SELF-EDUCATED MEN AND BOOKS. To the poor, ignorant man, I say, let no man tell you that “a little learning is a dangerous thing.” The least of it is not half so dangerous as that ignorance which can not read and write. If Patrick Henry once said—“*Natural* parts are better than all the *learning* in the world”—don't believe it, though he said it. What would he not have been, had he possessed only half the learning of the world? Of what would the power of his “*natural parts*” have stopped short in human greatness, in human eloquence, if he had been possessed of the *purchase* of the lever of learning? The self-made man may boast—I love to admire him rising by the lone power of his genius; but I despise his self-sufficiency, when he boasts against “*the books*.” Not once in an age does it happen that one self-made man stamps the age with his genius. But at last, how can any man be said to be self-made? Those who claim to be self-made, are so made by the *books*, if not by the school-master. Tell me the knowledge that any one of you all has which was not derived, directly or remotely, from the books? None,—there is none in law, none in medicine, none in agriculture, none in mechanic arts not traceable to the books. And, my friends, if you would only yourselves go to the books, they would inform you much better than you are now instructed, by tradition, or second-hand informers. Look for yourselves, learn for yourselves—to the books! to the books! and be self-made yourselves, if you will. But the school-master must teach you *how to read and write*. Remember that the books are sealed to those who can not read and write. I will not descant upon the pauperism and the crime which “a little learning” would di-

minish. No; there is a much more interesting class than that of inmates of poor-houses and of jails to be discussed. I mean one of the best classes of men on God's earth—a class with whom "the gods," are said to take part in their struggles through life—that class of good men, who, notwithstanding they were never taught, are so endowed by nature with noble instincts as to perform their whole duty worthy of themselves, worthy of the State, and worthy of their eternal destiny. Men whom ignorance does not debase; whom it does not enervate or make to despair; men who work in the world against all odds of ignorance, and win a crown of earthly honor and of eternal glory. I know who they are—I know every one of them in my old district by name. I would have a word with them.

They are the *good, hard-working, honest* class of men, who, notwithstanding they can not read and write, can "*make their marks*" in the world. May God bless them!

I know an aged man—small in stature—his head is silvered over with the white frost of years—with a lively joyous face, and a twinkling blue eye that needs no glass for its keen vision—an honest heart and a hand as hard as axe-helve and plough-handle would have it—who does "not know a letter in the book," and who yet is rich in the stores of practical wisdom and of real wealth. Some one near Guilford, in Accomack, can guess who I mean. I would have a word with that good old friend of mine. I speak to his noble example—I speak to him because I love him, and he belongs to a class by whom I wish to be heard—I speak to him for his class. Listen to me, good old man. I see you smile and swear you *are not old*. Well, that is exactly like you, but I am serious. You *are great* in my eye. You can not read and write—you will have to get some one to read what I write to you and all like you—but you have, without learning, achieved a conquest in life. You began a neglected, penniless, friendless boy—you have worked, honestly worked, at hard labor, until your hand is as hard as you heart is soft and tender. "Scorn can not point her slow-moving finger" at you. There is no blot on your name. You have dug the earth for your bread, and lived literally by the sweat of your brow. You have lived honestly; you have paid your debts with the cash down; you owe no man any thing but good will; your industry has been untiring; a thousand and a thousand sturdy blows you have struck with a freeman's "right good will" for the "glorious privilege of being independent." Every way by which you have won "geer" is justified by honor. You have oppressed no man, you have been just to every man, and have never robbed the poor, or the widow, or the orphan. You are a *happy old man*—there is jollity in your very eye, and temperate habits have made you healthfully buoyant and cheerful. God has given you children and grandchildren, and your sons and daughters are like a thick forest around you. The kind, hospitable partner of your bosom and of your journey through life still abides with you on earth; and you have laid up *plenty!* *plenty!* and have *peace* with it for your good old age. This is a mastery, this is a self-made man. Now, tell me, good and great old man, what would you *not* have been had you held in your grasp the lever of knowledge? Ah! you know what it is to have a hand-spike at a log-rolling or a house-raising. You know what a "*purchase*" of power is. Knowledge, learning, is all that and more. How many blind licks it would have saved you? How many thousands and tens of thousands more than you have now in your old "blue chest," you would have had, could you have seen by "learning's light" the dark ways of nature? Do you know that learning made your axe-helve, your plough-handle—that it applies in the most proper way that very hand-spike—your ox-chain—that it prepares the very best manure—that it can beat you all hollow in applying it to the soil—that it knows more than you do all about the soil of every field you plough, and can tell you of every plant which grows on it, and the food it craves—did you know that learning saves labor—sells your grain, fixes the price, and carries it away for you. Ah! you shake your head, and say,—“Well, I would not give my poor weak experience for all your book-learning!” Do you say that? Well, if that be so, if you know something which the books don't teach, I am the more urgent still—you *must write it down* for the rest of the world—for your own posterity—*write it, record it*, you are bound to do so for the sake of some poor fellow who is to come after you in your way of life, and who hasn't your experience. But you *can't write*. Pity! pity! You know something, then, which you can't communicate to more than the few who hear the sound of your voice. Learning would enable you to do that much at least. Suppose you go and get some one else to write it down for you, *your experience in cultivating corn, potatoes*. You told me tobacco was a valuable medicine for horses once. Write it, I say, and have it printed, and bind it, and what then does it become but *book-learning*? Book-learning to be dispensed by somebody else, perhaps, in the present or coming generation; and what is poor despised "*book-learning*," at last, but somebody's *discovery*, somebody's *experience* of nature's laws or nature's truths? Don't despise it, my friend; but go to that old, long-used, well-worn leathern bag, or "*stocking-leg*" purse in that same old blue chest, and take from it *twelve*, just *twelve* of those hard dollars for which you have worked so honestly and so hard, for each and every child and grandchild you have, put it in his satchel and send him to school.

II. THOUGHTS ON RELIGION AND PUBLIC SCHOOLS.

BY RT. REV. GEORGE BURGESS, D. D.

If the Christian religion be from God, it ought to influence every thought and act of man, and to control every department of human life. If education be the school of character, it is least of all to be excepted from the sovereignty of that religion.

That Christian men, therefore, should view with indifference any attempt to establish an absolute separation between education and religion, is not to be expected from them till they renounce their faith. They can have no more idea that a child can be rightly educated without instruction in the laws of God and in the Gospel, than that a man can live without the same knowledge, and yet duly serve his Maker, and be prepared for the life to come.

Education, therefore, must be religious, and must include instruction in all necessary knowledge of the truths of divine revelation. In proportion as the dignity, the importance, and the efficacy of education are magnified, this necessity becomes but the more impressive and undeniable. If the educator could be content with defining his task as that of teaching to read and to write, or even to measure the earth and to number the stars, it might be allowed that this, like any other specific skill, could be imparted without saying a word concerning duty, or sin, or salvation. But we are accustomed to hear far higher praises of the work and of the men that are to form the youthful mind, and so to shape the character and the destinies of a people. Either undue and exaggerating honor is paid to the office of the teacher, or he must teach the most sacred truths, as well as those of inferior majesty and of only earthly interest.

The honest Christian must bid him take his choice. Be the teacher, he will say, of an art or any number of arts, if you will, and touch not moral things; or be a teacher of all which makes the man, and then you must teach the knowledge of God.

The honest teacher will answer, either that he is a Christian, and is ready, according to his ability, to teach religiously and to teach religion; or that he is content to leave to others the higher task,

and to teach only the elements of secular science and art. In either event, there is no longer any confusion; and the question, whether there shall be a course of secular instruction, and a separate course of religious instruction, or whether one course shall mingle both, becomes a question of possibility or of expediency, and is transferred from the sphere of abstract principle and imperative conscience.

The clergy of most countries have adhered to the wider view of education in schools, and have insisted, as long as they could, that it should be distinctly Christian, and should even form a part of the ecclesiastical system. They are not to be blamed; and had union in religious belief been preserved, it is hard to prove that their plan would not have been altogether the best. But for this it is now too late. In all free nations the freedom of discussion, doubt, and denial has been practically asserted; and, for all purposes of religious education, the body of Christians is *one* no longer.

In education, viewed as a whole, the place to be occupied by religious truth has not lost, for this cause the smallest measure of its importance. Religion is still as sovereign there as ever. Somewhere in all true and sufficient education it must have its throne; and from that throne it must sway all the rest.

But the State can support no such throne; because the State is composed of an immense mass of men whose religion is not the same. When education becomes a matter of public provision, the very highest part of education is excepted. The public school, even if under that name we should embrace any more elevated institutions which the public funds might sustain, is not the seat of that portion of this moral work which has to do, most directly and most mightily, with the heart. That, however, it must forego, and be content with its own appropriate task and praise.

The higher task must be performed elsewhere; and the consecrated precincts of the church, and the equally hallowed walls of home, must be the scene of religious instruction. It has there, too, a fitter and a happier sphere than the State, with all its wealth or its universal care, can attempt to furnish.

All this is perfectly consistent with the undoubted fact that religion is the prompting motive from which public education has had its origin, and must have its best support. It sustains that education as it sustains every good design. It desires that all men should be trained in useful knowledge of every kind, because it desires their improvement and happiness. Ignorance, in its view, is weak-

ness, is poverty, is exposure to moral disease, is the absence of many of the highest enjoyments, is the obstruction of the purposes for which the beneficent Creator made man in His own image. Therefore, ignorance is an enemy to godliness, and a hinderance of salvation, as well as, in itself, a positive and mighty evil; and religion must long and labor to remove it from the path of society. To suppose that a Christian can be indifferent to the intellectual cultivation of his fellow-men would simply imply that he had no appreciation of its value for himself; for he must wish to communicate all which he prizes.

It is perfectly true, also, that even in the teachers of all secular knowledge, religious men will desire and prefer a spirit and principles like their own. A father who merely commits his son to the instructions of a writing-master, would rejoice to find in him a man of Christian worth, and would feel that the boy was somewhat safer. It is not possible, in any department of life, to exclude or neutralize the beneficial influence of the steadfast fear of God and the sincere love of mankind. The religious man or woman will always be, all other things being equal, unspeakably the better teacher, even of arithmetic or of needlework. Under any system of public education, however remote from a sectarian or exclusive character, this preference will be felt, and cannot be changed into indifference.

Under these systems the introduction of religious instruction, in combination with secular instruction, is relinquished, not upon grounds of abstract excellence, but upon those of convenience or necessity. Accordingly, either the system is not extended over the youngest or the oldest of those who are to be educated; or if it be, it does not command a general acceptance. The public school offers no urgent invitation to the child just rising from infancy; it leaves him, not unwillingly, to the gentle hands of his mother or of some maternal preceptress. At the other end of the course, colleges and universities are commonly allied to the Church rather than to the State. From the latter they accept aid; to the former they accord welcome intervention and an active control. Not merely financial or political considerations fix the limits of public education on this side of the highest institutions of learning. For it is felt that all education must begin and end in religion; that the infant must learn the names of God and of the crucified Redeemer with his first accents; and that the young man should not go forth

into the world of professional study, action, and influence, without a settled faith. But between these two periods lies the time which public education appropriates; appropriates, simply because the interests of the commonwealth require the instruction of all in useful knowledge, and because no other power can furnish the means of such instruction for all alike.

If the task of religious education be then declined by the public teacher, it is left in hands which certainly are better fitted to execute it with dignity, with diligence, with fidelity, and with tenderness. It is in the hands of special teachers, whose labors are voluntary; of pastors; and of parents.

The Sunday School has become one of the institutions of society, wherever the English tongue is spoken. It enlists a body of teachers whose intelligence is animated by no other impulse than that of Christian love. They receive no hire, and they wield no instruments of discipline. They come to their pupils on they day which is consecrated to all holy works of piety and charity. There is nothing to disturb the pure influence of their instruction; no other studies crowding in; no intermixture of heathen mythology or abstract science; no hurry to the playground; no dread of the rod or superadded task; and none of those hereditary associations, which, absurd, unjust, and pernicious as they are, yet do still, more or less, connect themselves with the relation between the boy and the professional teacher. Love is the bond between those who teach and those who learn on the Sabbath.

When the pastor is the teacher, love is united with reverence. His office inspires that reverence, and his intelligence in sacred things merits a confidence which might elsewhere be less readily bestowed. The duties of pastors to the young may be but imperfectly undertaken, especially where the ancient and most useful custom of catechising has fallen into neglect. But it would still be great injustice to compare their influence with that of teachers who sustain no sanctity of office, have devoted no special study to sacred letters, and are not, in virtue of their office, supposed to be persons of piety.

But no teachers have an appointment more holy or divine than fathers and mothers. They cannot but educate their children religiously or irreligiously. No separation can take place in the training of home; for that is purely for the heart and soul; and its first and supreme end is the goodness of the child. He learns his

prayers on the knees of his mother; he is taught to examine himself at the close of each day; his conduct is, without ceasing, subjected to a watchful scrutiny; there is no vacation, no recess, no occasion when he is released from this supervision. These teachers have an authority, too, which, for him, is the direct interpretation of the will of his Maker. To the child, the voice of the parent is the voice of God; for so has God commanded. And all which he hears and learns from these sources comes to him as nourishment from the bosom of an exhaustless love, to which his childhood must cling as if it were to him the whole wide universe.

This is the provision which the Church and the family, with many collateral aids, assign for religious education. Piety in the public teachers, and religious truth in the common school, would be additional aids; but are they indispensable, or could their influence be weighed in the balance against all this? Whatever may be the excellence of many professional instructors, whatever their noble enthusiasm in their calling, it is not to be disputed, that, as a body, the teachers of public schools are governed, in the choice and pursuit of their occupation, by the same motives which incite persons of respectable and worthy characters in all departments of business. They engage in it for a remuneration; they abandon it when it becomes unprofitable; or they exchange it for positions which are more lucrative or more to their taste. They are not appointed, and cannot well be, for their personal devoutness. If they should teach religion, it would be as they teach grammar, not because the task is known to be enthroned in their affections, but because it is made a part of their business. We do not disparage the transcendent beneficence and exalted piety of many teachers; but it is an accident, so to speak, whether these mark the character of an individual teacher; they are not and cannot be the distinguishing properties of a class selected as teachers must always be under any public arrangements. Little will it avail, that a cold, dry, unfeeling, and perhaps unbelieving teacher, consent to teach catechism, or to open his school with prayers. A truly religious teacher, even without those exercises, will leave some impress of his own spirit on the minds which he has assisted in forming and replenishing. This can be attained even now; and if any would avoid this, they must make piety a ground of exclusion from the office. The most determined unbeliever would hardly desire such an issue; but neither can piety be made a condition of admission, if it were even in our power to en-

force the rules, since the talents and acquisitions which make the successful teacher are dissociated from it; and since, precious as it is, it cannot, in this position, be deemed one of the chief instruments on which the cause of religion must rely.

What, then, is the power which Christianity *cannot*, and what is that which it *can*, exercise in the system of public schools of a land like our own?

It *cannot* teach all its doctrines and laws, as they are held by any body of Christian believers.

It *cannot* blend religious truth with secular instruction, to any degree which implies the attempt to communicate systematic religious knowledge.

It *cannot* attempt to inculcate a religious character, or, in other words, faith in the Lord Jesus Christ, by precept and exhortation.

It *can* take for granted a general acquaintance, in the pupils, with the facts of Christianity, united with reverence for it as a Divine revelation.

It *can* infuse into the teacher, so far as he obeys it, a spirit which attracts to his religion, and inspires the desire to resemble its faithful followers.

It *can* afford a Christian view of every science and every department of knowledge, and show their connection with revealed truth in its great outlines.

It *can* inculcate the whole moral code of the Gospel, by rule and example.

It *can* exclude and counteract every influence of infidelity.

It *can*, in many instances, with the universal consent of the community, affix a more decidedly religious character to the school duties of each day, by the observance of daily prayers.

It *can*, with the same consent, introduce the Bible, and promote, by daily reading, the familiar knowledge of its contents; not as if it were a mere reading-book, though the best, but as the generally acknowledged word of God.

It *can*, with the same consent, which may generally be assumed, impress, as occasion is offered, all that great and priceless mass of truth in which all Christians are substantially united.

IV. MEMOIR OF NICHOLAS TILLINGHAST.

BY RICHARD EDWARDS.

Principal of the State Normal School at Salem, Mass.

[An Address delivered before the Annual Convention of the Graduates of the State Normal School at Bridgewater, Mass., on the 30th of July, 1856.]

FELLOW TEACHERS AND FELLOW PUPILS :

We have met in social and friendly gathering for many years. There are doubtless those here who formed a part of that small band, with whose help, the school of which we have been pupils, was first launched upon the voyage of its existence. Year after year, as occasion would permit, they with others have come up to this, the scene of their former labor, to feel the softening influences of early associations upon those hearts which the business and turmoil of life do so much to harden and deaden ; or perhaps to renew here where they were first consecrated to a noble profession, their vows of devotion to its trying but exalting and responsible duties. Some of these occasions have been joyous. The familiar salutations of friends, from whom we have been for a season parted, the warm grasp of the friendly hand, the mutual recital of experiences, the sight of the well known village and its landscapes,—these have been the most prominent circumstances of a convention, and have forever associated with our gatherings the most gladdening recollections. But all has not been joy ;—there have been also times of sorrow. Death, that spares no band, has not withheld his hand from ours. Again and again our ranks have been thinned by his unerring shafts. One after another, the young, the promising,—those to whom we looked for noble deeds in the future, have fallen by our side, and we have mournfully betaken us to our journey alone.

But whatever change may have met our eyes here, we always, except on a single occasion, until one year ago, were cheered by the countenance, and encouraged by the words of one whom we loved as our teacher, and venerated as a noble illustration of the Christian man. At our last meeting, we were informed that ill health kept him in a distant part of the State. To-day, we miss him again, and even the faint ray of hope with which we then solaced ourselves, has been extinguished. Our hearts are saddened by the knowledge that he has departed from our midst, and that while we continue bound



A. Tellinghouse

it appears that in every respect, in character, in temperament, in manner, the boy was father to the man.

At a proper age he was sent to the Bristol Academy, at Taunton, where he pursued the studies usually attended to in those days by lads who were to prepare for college. It had probably been the intention of his father to give him a college training, but the father's death, which occurred in April, 1818, left the family in circumstances that induced them to relinquish this project, and the young man was taken out of the Academy, and placed in the office of a lawyer. Here he continued for about two years; and in June, 1820, through the aid of Hon. Marcus Morton, at that time a member of Congress, an appointment to a West Point cadetship was obtained for him. Thus was the whole course of his life changed; and instead of the smooth and pleasant path of a New England student, he was ordained to enter upon the rough marches and toilsome labors incident to a life in the United States Army. Speculation as to the degree of usefulness he might have attained, if such change had not occurred is vain; perhaps the wisest cannot with any confidence offer an opinion upon the subject. For those whom it intends for high usefulness, Providence always furnishes the necessary culture, whether they be reared in the cot or in the palace; whether they are trained in the cell of the student, or amid the hardships of a frontier life. There can be no doubt however, that the severe mental discipline of the Military Academy, the self-reliance induced by the active duties of the graduated officer, are, to those who possess moral stamina enough to endure them, and make a proper use of them, excellent preparations for the business of teaching. They not only contribute mental strength, but accustom the mind to act promptly from its own judgment formed upon the spot; and this readiness in deciding is a valuable attainment to one whose vocation calls upon him to immediate decision many times in the day, and upon very important questions,—which is in a high degree the case with the teacher.

Mr. Tillinghast's course as a cadet was in keeping with his general character. As a scholar, he does not appear to have been brilliant, but we doubt not, he was always reliable. It is something to say of him, that he passed successfully the several examinations to which every cadet is subjected. Of his own class, consisting originally of seventy members, only thirty-one were able to come out of the ordeal unscathed, at the end of four years. That he was among the thirty-one, will certainly appear to his credit as a scholar, when it is remembered that he was one of the twelve youngest in the class on being admitted. But he occupied by no means a low position in the class

thus eliminated. His number on the merit roll was thirteen, "which," in the language of the venerable Col. Thayer, at that time Superintendent of the Academy, "was a highly respectable standing, considering that he was then the youngest but five in his class, and that in scholarship, the difference between him and most of those above him was very slight." Those who have learned all they know of his success as a student at West Point from his own conversation in respect to it, will be surprised to find that he stood so high; for here as everywhere, his own estimate of his labor and of its results, was very far short of that placed upon them by others. Indeed the standing here indicated is precisely that which, from his character, we should expect to find him occupying. It does not indicate the possession of splendid and showy powers, but rather of a mind solid, reliable, thinking more of the quality than of the quantity of its acquisitions,—acquiring carefully, so that every new truth learned should become a part of the mind itself, and be a support and strength to it when the Academic course should close, and the special stimuli there applied should be withdrawn.

He graduated on the first day of July, 1824, and was commissioned as a second Lieutenant in the Seventh Regiment of Infantry. After serving for three years on the Western frontier, he was attached to the Military Academy as an instructor in Chemistry, Mineralogy and Geology; and having performed the duties of that situation for two years, he again joined his regiment in the West. In August, 1830, he was reattached to the Academy as Assistant Professor of Ethics, and continued to act in that capacity until December, 1834, when being promoted to a captaincy, he again went to the frontiers, and remained in command of a company in Arkansas for nearly two years. He resigned his place in the Army in 1836.

We doubt not that Mr. Tillinghast, while an officer in the army, discharged his duty faithfully, and to the satisfaction of his superiors. But his tastes and feelings were ill-adapted to that mode of life. He found good and noble men among the officers under whom he served, and with whom he was associated, but we think we may say with truth that his experience of military life deepened in his mind the dislike for war and for all its paraphernalia. He was emphatically a man of peace, in feeling and in principle. We refrain from attempting to state his views on this point with any great degree of minuteness, for we are not aware that he ever took the pains to make them known in detail; but that he had a strong repugnance to the soldier's life, and also to the deciding of national differences by an appeal to arms,—that in short, he was opposed to the whole

institution of war, is a fact that will be abundantly borne out by all who were familiar with him during the latter part of his life. Especially was it true that he had very little respect for the holiday parades of our "citizen soldiery." And yet, he was by no means insensible to the good qualities of those engaged in the profession of arms. He was keenly alive to that sense of honor which prevails among army officers. He has often been heard to say, that although he was opposed to the principle of placing a military chieftain at the head of the nation, yet his observation had taught him that the honorable impulses of a military man are often more worthy of confidence, even in that high station, than the principles, so called, of a time-serving politician.

During his residence in the the western forests and prairies, he suffered much from the diseases incident to those regions,—fever and ague and other complaints; and his friends think that his physical powers were essentially weakened during his stay in Arkansas. His resignation was undoubtedly caused by this circumstance, joined to the distaste for military life to which allusion has already been made.

From the time of his leaving the army until his appointment by the Board of Education, in 1840 to take charge of the Normal School at Bridgewater, Mr. Tillinghast was a teacher in Boston. For the most of this time he taught a private school, fitting young men for West Point, for engineers, &c. He was also for a short time an instructor in the English High School at Boston, and always entertained a great respect for Mr. Sherwin, the accomplished head of that institution.

It was while laboring in this quiet and retiring manner that he was sought out by Hon. Horace Mann, then Secretary of the Board of Education, and invited to accept the Principalship of the School which it was proposed to establish at Bridgewater. After serious consideration, and with great reluctance, he finally consented to accept the post. On this occasion, as always, he distrusted himself. He shrunk from assuming the grave responsibility belonging to the situation. To be a teacher of teachers seemed to him a great thing, and he did not look upon himself as fitted to accomplish great things. Verily the history of man does occasionally furnish examples of a judgment erring on the side of modesty!

In order to understand the importance of the work which Mr. Tillinghast was called upon to do, and the consequences depending upon it, we may find it useful to recall some facts in regard to the establishment of the Normal Schools in Massachusetts. They were brought into existence by the self-sacrificing efforts of a few gentlemen, whose attachment to the cause was earnest and heartfelt. The

establishment of these schools was not a measure first proposed by a legislative committee, and put into operation wholly at the State's expense. On the contrary, it was proposed by individuals, and for the first three years of their existence, the State bore much less than half the expense of supporting them. In the early part of the year 1838, Edmund Dwight,—a name that ought ever to be held in grateful remembrance by all who feel an interest in the success of the public school system of Massachusetts,—offered through the Secretary of the Board of Education, to furnish ten thousand dollars, to be expended under the direction of the Board, in establishing seminaries for the preparation of teachers for the public schools; provided the Legislature would appropriate for the same purpose an equal amount. After some opposition, the proposition was accepted, the ten thousand dollars were voted, and the Board was empowered to put the schools in operation. It was decided that there should be three,—one at Lexington, one at Barre, and one at Bridgewater. Those at Lexington and Barre went into operation in 1839, and that at Bridgewater in 1840. The sum of money furnished in the manner just mentioned,—twenty thousand dollars,—together with such sums as were raised in the towns where the schools were located, added to what was furnished by individual contribution, was sufficient to continue the schools for three years. This, it was judged, would be sufficient time for trying the experiment,—for testing the plan of training teachers for the public schools at the public expense. At the end of the three years, of course, the whole expense of their continuance would come upon the State. Under these circumstances, it will be easy to see that the duty of the teachers of the Normal Schools was no sinecure. It was required of these teachers, that, with exceedingly imperfect instrumentalities, they should demonstrate to the frugal voters of the Commonwealth, the utility of a set of institutions that were to take from the State treasury large sums for the erection of school buildings, and ultimately, some seventeen thousand dollars annually for their ordinary support. For feeble humanity this would seem to have been task enough; but in addition to all this, they were compelled to encounter a fierce opposition from many teachers, who thought their own field of labor encroached upon by the new, and hitherto unheard of, State seminaries. Surely, under these circumstances, success was a great achievement, and the fact that success was attained, speaks the praise of those earnest teachers more loudly than any words of mine can do it. It may I know, be urged, with truth, that the schools had good friends in the Legislature and elsewhere, and that the Secretary of the Board was a gentleman of superior

ability, extended culture, great influence, indomitable resolution, and unflinching devotion to the cause, in which, at a great personal sacrifice, he had engaged. The earnest support of all these was necessary to the successful establishing of these institutions. If any of them had been wanting, the scheme must have fallen through. But every friend of popular education has reason to be thankful, that in the trying hour they all stood bravely at their posts; that the Secretary had counted the cost before entering upon the war; that members of the Legislature, of whom one is still an honored resident of this town, regardless of self and self-interest, gave their energies to the support of a measure which has so abundantly improved the character of the public schools; that the teachers, in spite of many obstacles, such as the brief period during which their pupils were under their instructions, the want of suitable buildings and apparatus, and the influence of the opposition already mentioned, still persisted in their noble work, with a faith that removed the mountains in their path, and an industry that knew no fatigue.

But it will be especially useful for us to enquire what means our teacher took to prepare himself for the work which he regarded as of such importance. The school at Barre, which went into operation on the 4th of September, 1839, had been placed under the charge of Professor Samuel P. Newman of Bowdoin College. Mr. Tillinghast, when he had finally concluded to accept the appointment offered him, proceeded to Barre, and spent six months in observing the methods, and studying the principles adopted by Prof. Newman in his school. During this time, he prepared many manuscripts of lectures and explanations for his own use in his new position. Every subject on which he was to give instruction was carefully thought out, and the results of his thoughts was committed to paper for future use. This work of six months, however, was but the beginning of what may be called his preparatory labor. Every exercise was carefully considered before it was to come on,—usually on the night before; and very frequently it happened that midnight found and left him at his labors. And such watching was not atoned for by morning slumbers, for the early morning was likewise devoted to duty. He was a believer in industry, in the power of earnest work, and maintained that nothing truly valuable can be accomplished without it. When he had thus prepared himself, as well as the brief space of time, intervening between his appointment and the commencement of his labors would permit, he entered upon his duties as Principal of the Normal School at Bridgewater, on the 9th of September, 1840.

Here and at this time, no doubt, began the great work of his life.

Whatever may have been his success in his previous employments, it is not likely that it was such as to make him particularly eminent. But in the Normal School, his position soon became a marked one. Upon the public schools of the Commonwealth, he has exerted a telling influence for their elevation and improvement. This influence is felt not only in those schools which are under the direct charge of his pupils, but also in hundreds of others, where his name was never heard. His spirit, his views, his methods, seem to have become part and parcel of our educational system,—they seem like the waters of a clear stream, to impart their own purity to the wave with which they mingle. They float about in the educational atmosphere, and are inhaled by all who breathe it. There is no especial part of the system which he originated ; no institution which he founded or endowed, or to which he gave a name. These may be called the material or corporeal parts of a people's educational means. But he furnished much of what we may consider the soul,—the animating principle that moves this otherwise dead machinery. He built no school-houses, but he built the character of many an earnest and successful teacher. And as the teacher is more valuable than the school-house or school system, however valuable these may be, as the soul is nobler than the tenement in which it dwells,—so was his life a nobler benefaction to the cause of education, than if it had been spent in endowing institutions or framing systems. Travel over our Commonwealth ; visit elsewhere hundreds of school-houses of every degree of architectural pretension, from the lowly, weather-stained cabin in field or forest, to the costly structure that graces the attractive avenue in the city ;—and you will find his pupils in them all, and all without exception, ready to attribute to him the elements of their highest success.

As a teacher, Mr. Tillinghast had many striking characteristics. In the first place, he acquired a power over his pupils,—men and women,—that we think is seldom attained. To mere lookers on, it seemed like a sort of fascination, and even to the objects of it, the pupils themselves, it was often a mystery. For he used none of the arts commonly practised to secure the good opinion and attachment of men. On the contrary his manner, towards those who were not more or less familiar with him, was sometimes thought to be cold, distant, reserved. Even in his intercourse with his pupils, he was far from habitually adopting that freedom and ease of manner which often makes school so pleasant. And yet, we may venture to say that the instances are very rare, in which a teacher is so earnestly and at the same time so universally beloved by his pupils as was Mr. Tillinghast.

need to vary our modes of reproof or punishment, according to the character of the individual to be affected. Our moral power is too feeble ; it cannot bend the stubborn will, or arouse the slumbering energies of our pupils, without the aid of schemes devised by the intellect. But in Mr. Tillinghast, the moral power was so well developed that it seemed to bear down all opposition before it, without the aid of shifts and expedients, and for himself, his mode of proceeding was undoubtedly the best.

Of his character as a teacher of the intellect, we may also say that it was distinctly marked. His most notable trait in this respect was something similar to what is usually expressed by the word thoroughness. And yet this word does not fully exhibit the idea. There was thoroughness in his teaching, but there was also another element, which if we could coin a word, we might call *logicalness*,—an arranging of the subject taught according to the character and wants of the mind to be instructed. In every operation, there was not only thorough knowledge, but thorough reasoning. Every point was not only to be thoroughly understood, but it was to be understood rationally, it was to be understood not only by itself, but also in its relations. The pupil was himself required to discover if possible, or at least to appreciate, the connection between one part of the subject and another, to see how much of one statement could be inferred from a previous one. Mere thoroughness in the knowledge of facts, or of principles, learned and remembered, is a very different matter from the thoroughness that characterized the teaching of Mr. Tillinghast. The one can be accomplished by the industry of the pupil ; the other requires, in addition, careful thought and ready skill on the part of the teacher. His great weapon, by the help of which he accomplished his work in the recitation-room, was the asking of questions. And his questions were always framed with a view of ascertaining, in respect to the subject of the lesson, *what* the pupil knew, and *how* he knew it, and the causal interrogative was so frequently employed in his exercises, that his pupils were in the habit of calling it the “eternal *why*.” He had rare skill in arranging his questions, so as to expose every false opinion, every illogical conclusion. How many times has the glib and fair-seeming explanation been shown to be hollow and unmeaning by his searching interrogatories ! How often have ignorance and sophistry been forced suddenly to stand out in their native deformity, as at the touch of an Ithuriel’s spear, when in guise of knowledge and wisdom, they had been silently but surely working the destruction of thorough study and good mental habits !

And how many teachers rejoice, to-day, in having had their eyes first opened by these thorough and faithful recitations !

From this it will appear that Mr. Tillinghast was a teacher, an educator, one who considered his employment an art, to be rightly practised only by those who in some way have studied its principles. It is scarcely necessary for me to add here, that he was entirely indifferent as to where or how such study had been pursued, provided only it had been thorough and efficient. He thoroughly knew what he was to teach,—no man better,—but he also knew how the knowledge must be imparted in order to promote the mental culture of the pupil. His recitations were quiet, he employed in them very few words, and yet they were full of earnest thought both on his own part and on that of the scholars. Indeed the most noticeable thing about his recitations, was their tendency to awaken thought in the pupil. And this we should be prepared to expect from knowing how they were conducted. Every individual was required to stand upon his own feet, and when he made a statement, to make it from his own perception of its truth. There was no trading on borrowed capital,—or if circumstances seemed to indicate that this was attempted,—that something was confidently stated, which had been received by the pupil upon authority, when it ought to have been reached by his own thought, how soon a skillful question, calling for an exhibition of the vouchers, became the occasion of a failure !

It may not be uninteresting to state here, that Mr. Tillinghast was of the opinion that it would neither be well nor expedient to make the Normal Schools exclusively professional, in the sense of excluding from them every study except that of the science and art of teaching. Indeed, his own instruction in this latter department was in a great measure, though not entirely, imparted indirectly, and in connection with the teaching of other things. And let it not be thought, on this account, that he considered it of trifling importance. By no means ; for a considerable portion of time was devoted entirely to this subject in his own school. But when we speak of Mr. Tillinghast's giving instruction indirectly, we must not forget that he had a power of silent, and perhaps "unconscious" teaching, that produced great and positive results. This we have already attempted to set forth. He taught many things, without uttering a word, that in the minds of his pupils, have taken a distinct form, and become to them a sure guide.

But while Mr. Tillinghast was thus faithful to the weightier matters of his profession, he did not neglect the minutæ,—the mint, anise and cummin of pedagogic law. Among the humble, but exceedingly

appropriate virtues which he carefully practised, was that of punctuality. The habit of punctuality and regularity had undoubtedly been strengthened in him by his experience in the army. But aside from this, he was punctual and regular from principle. Only once during the thirteen years that he was at the head of the school at Bridgewater, was he late ; and that once, no one who was a pupil at the time can soon forget. So remarkable a thing was it for Mr. Tillinghast not to be at his post at the moment for beginning the exercises, that it was thought he must be prostrated by sickness, and a committee of the pupils was appointed to proceed to his house and to ascertain the facts. This committee found him quietly walking his parlor, awaiting, as he supposed, the hour for opening the school. He had just examined his watch, and although it really indicated the correct time, yet by some strange mistake, he thought he had half an hour to spare.

To enumerate all his school-room characteristics would occupy too much of our time. We will therefore only glance at a few, of which the contemplation would seem to be the most useful. And, first, he was remarkably accurate in his work, even to the minutest details, and he required perfect and minute accuracy in his pupils. No excellence of explanation, no appreciation, however thorough, of general principles, was ever allowed to atone for mistakes in the details of an operation, mathematical or otherwise. And such errors he had great skill in discovering. A mere glance of his eye over a blackboard solution of a problem in mathematics, would detect any error wherever it might lurk, among the wilderness of figures and symbols. And it should be noticed that in carrying out this trait of his character, he was always as ready to acknowledge his own errors as to point out those of another. Although such acknowledgment was seldom required, yet whenever it was required, it was made with alacrity, and without any of the miserable shuffling, explaining, and excusing sometimes practised on such occasions by teachers who would fain be considered infallible.

But rather than say anything further of my own, concerning Mr. Tillinghast's qualities as a teacher, I will take the liberty of repeating the testimony of another of his pupils, a gentleman eminent in his profession, occupying an honorable and important post connected with the educational interests of another State, and who was for long and intimately acquainted with our beloved teacher. This testimony seems to me so just and well expressed that I introduce it even at the risk of some slight repetition.

"He was a truly religious man, and in the highest and best sense ;

for his religion manifested itself in his life and deeds, rather than in his words. He always sought to know the right, and to do it; to seek the path of duty and to follow it, lead where it might.

"He was sincere and true in his dealings with himself and with others, neither doing nor saying anything merely for effect. He censured the wrong because it was wrong, and commended the right because it was right, and showed by his life that his own standard of action corresponded to that which he indicated to others.

"He was truly and unaffectedly modest. He forced you to think of the subject he presented rather than of himself. He never pressed himself, his opinions, or his school, on the notice of others. He sought no expression of their good opinion, and deprecated not their ill opinion. While at times he may have felt that his school did not receive that attention from without which it deserved, and that his work was not fully appreciated by any save his own pupils, he would by no act or word call attention to it. He was content to labor on, believing that the time would surely come when the result of his work would be made manifest, whether he should be known in it or not.

"He had that high self-respect which led him to respect others. He therefore appealed to worthy motives only. Everything like trickery and deception he despised, in teacher as well as in pupil. Hence he could never tolerate those whom he could not trust. He had a deep sense of personal responsibility, and sought,—with great success—to inspire others with it.

"His words of reproof were few, yet apt. There was no escaping them. They never came undeserved, they were always direct, always kindly spoken, and always "told home."

"Though at first reserved and apparently cold and distant, he was very warm-hearted and generous, sympathetic and kind. Happy indeed were they who came to know him intimately.

"He was industrious, earnest, and devoted. He allowed himself no idle hours, and discouraged all idleness in others. He believed that 'nothing good was ever come by without labor,' and regarded industry as a duty. Hence, he never did his pupils' work for them. He would guide them in the right track, and indicate methods of overcoming difficulties, but nothing more. His suggestions and explanations, and the assistance he rendered never did away with the necessity of thought on the part of the pupil, but rather made it the more necessary. With him, no glibness or readiness could conceal or atone for a want of study; nor could self-distrust or diffidence hide the evidence of faithful preparation.

"Almost invariably accurate, he was ever ready to acknowledge any error he had made. The sentence, 'I was wrong in my statement or opinion,' fell from his lips, though very, very rarely called for, as easily as did the contrary one, 'You were wrong.' He never sought to hide, or explain away, or excuse erroneous statement or explanation which he had made; but, always endeavored to correct it. He was very successful in exciting a similar spirit in his pupils.

"He had great analytical power. While he could grasp a subject as a whole, he could also comprehend all its parts, could trace their relations to each other, and could determine the proper place and importance of each. To this power he was indebted, I think, for the great clearness of his explanations.

"He had a great love for thoroughness,—thoroughness in study, in teaching, in everything. Especially was he thorough in investigating and teaching the first principles of a science. In his view, a deficiency there was fatal. He held his pupils to a point till they mastered it, and could appreciate something of its relations. Those accustomed to superficial views, sometimes complained at first of their slow progress; but, when the work was done, and they were prepared for a higher course, they felt its value.

"In his teaching he was strictly inductive; developing his subjects easily and naturally, and removing difficulties, and explaining just enough to stimulate to exertion. He would question closely, and would make his pupils feel their ignorance and need of study, without humiliating them.

"He usually read character very readily and accurately, though he was sometimes deceived. This, however, but seldom happened. He understood his pupils much better than they thought he did, and knew much of their thoughts, feelings, and habits of life."

To this testimony I will only add a few considerations in regard to Mr. Tillinghast's character as a man. As has already been intimated, the great distinctive feature of his character was his constant reference to principle, in respect to every act. An eminent clergyman, who had been long on terms of intimate friendship with him, once made this remark to me: "I believe Mr. Tillinghast never asks himself any other question concerning a proposed act, or line of conduct, than this single one, 'Is it right?'" It is for Omniscience only to say, whether this was true on every occasion, and under all circumstances. But, so far as human insight could penetrate the hidden recesses of his mind, which was so simple and ingenuous, it seemed so to have been. And this conviction was felt by none so strongly as by those who were most familiar with his private life.

Notwithstanding the scrupulous severity with which he judged his own conduct, his judgment of others, and especially of his friends, was kind and liberal. He was always very lenient toward the faults of his assistant teachers, excusing in them many deficiencies that he would have severely censured in himself, and expressing great satisfaction with their performances, when it was morally certain that he would have regarded similar things in himself as of very little worth.

His practical benevolence, although it made serious drafts upon his moderate salary, was conducted strictly upon the Christian plan,—his left hand never knowing what his right hand was doing. Many a man could tell of substantial aid received from him in greatest need, and the books of benevolent and reformatory associations would show no meagre sums accredited to his name, were it not that the name was most frequently withheld, when the gift was delivered. Where prudence and benevolence came in apparent conflict, and either of them was called to give way, that duty generally fell to the share of the more cautious virtue. All generous reforms had in him a warm sympathizer, and a prompt supporter; and, his firm and consistent anti-slavery was not without the usual accompaniments of obloquy and social proscription. Naturally, he was a man of strong feelings, both of liking and aversion. He was the firm friend,—not exacting, but liberal,—making his friendships more valuable to his friends than to himself. His aversions were not for persons, but qualities. He was really impatient of certain vices, such as deceit, pretence, the putting on of false appearances, the arrogating to one's self of excellencies to which there was no claim, the doing of things for mere effect, and similar maneuvering. His own conduct was outspoken and straightforward, and his feeling of contempt for the opposite course was very strong. But, he was free from suspicion, very slow to attribute bad motives, unwilling to believe evil of those about him; and, it was only upon very strong evidence, that men came under his condemnation.

In his religious feeling, he was habitually earnest and devout; but, his devotion did not obtrude itself upon men's observation, and draw attention to itself. It was a modest, firm, constant, deep-seated, calm, and trusting devotion. At the time of his death, and for many years before, he held the office of deacon in the Unitarian church, at Bridgewater. We believe he was a Christian, for, otherwise, we know not how to interpret that teaching of our Saviour. "By their fruits shall ye know them: a corrupt tree can not bring forth good fruit."

Mr. Tillinghast's modesty made him exceedingly disinclined to appear before the public as an author, and we are not aware that he

ever did so except in two instances. About the time of his appointment to Bridgewater, he prepared a work on Geometry, for the use of schools; and, a short time before the close of his connection with the school, he published an excellent collection of prayers for schools, consisting of such as he had himself used, while at Bridgewater. This book is highly prized by his pupils, both on account of its intrinsic merit, and because its perusal serves to recall most vividly the memory of their teacher, in one of the most interesting exercises of their school-days.

In the way of history, little more can be, at present, said. Long-continued hard work gradually enfeebled, and finally overpowered, a slender physical frame. In July, 1853, he left the school, as it was then hoped, to return to it in the course of a year. But, his body had become the prey of that fatal disease, consumption; and, notwithstanding the efforts of skillful physicians, and a winter's residence in Florida, he continued to sink in strength, and, on the 10th day of April, 1856, he died, in the fifty-second year of his age. For some time before his death, he had suffered much from severe fits of coughing, and had some apprehension that he should pass away in one of these convulsions. But, it was not so ordered. He encountered the "king of terrors" calmly and serenely, passing gently from a quiet sleep to the repose of death. He died the death of the Christian, rejoicing in the hope of immortality, and, with his last breath, committing his spirit to the Father who gave it. His remains lie upon the southern slope of the southern hill in the beautiful cemetery at Bridgewater, at a point that overlooks the pleasant village which was so long the scene of his labors,—where the sun smiles upon his rest, as his Heavenly Father smiled, in the hour of death, upon his returning spirit.

We are told, in Scripture, that the limit of our life is threescore years and ten, and that the strength which carries us beyond is labor and sorrow. From this declaration, it may be inferred that, as a general rule, the ages of men who duly observe the laws of their being, will approach, more or less nearly, the limit here established. Men, who receive their bodies and souls as gifts from God, which they are to watch and keep with jealous care; who do not poison the life-current of the one with the artificial stimulants to a depraved appetite, nor shake the foundations of the other by the upheavings of ungoverned passion; such men may be expected to approach, in their journey, the outmost confines of human life, and to pass away amid the consolations of a green old age.

But, there are, sometimes, crises in human affairs; times when the

development of some great principle, or the illustration of some truth not known to the multitude of men, demands that the work of many years shall be crowded into one; or, that the power of truth shall be illustrated in one glorious moment of martyrdom; when, at the call of duty, life must either be shortened by an intense devotion to a great work, or its thread be suddenly snapped as a testimony to the faithfulness of the laborer, and the greatness of the work in which he was engaged. The higher life, the progress of the race, may require the sacrifice of the lower life of the individual. Thus, we believe, passed away the beloved teacher, whose memory we this day, with a sad pleasure, recall. He entered the public educational field when the skies were dark, when the star of hope had scarcely risen, and was obscured by the cloud of an adverse public sentiment; when the normal schools were, even by their friends, considered only as an experiment, and one that, in the opinion of many experienced and able statesmen, would prove an entire failure. It was to a cause thus unpromising that he gave the whole energy of his soul. With an untiring industry, he devoted to his school his days and his nights. He engaged in hard and continuous study, not from motives of ambition, but from a deep sense of responsibility in respect to his school, and to its influence in advancing the cause of education. Nor did the necessity for such study arise from a defective education, but from a determination to adapt his instructions to the mental and moral wants of his pupils, and of those whom they, in their turn, were to educate. He was earnestly desirous that, so far as he could exert any influence upon the character of the public schools, that influence should be good, should tend to their elevation and improvement, and to the advancement of the cause of popular education; and this, not for his own sake, that he might acquire a reputation, and occupy an honorable position in the sight of men, but for the sake of the thousands whose hearts and minds are formed, in a great measure, in those conservators of New England virtue and intelligence,—the public schools.

Such were his aims, and the amount of labor which he thought necessary to their accomplishment, could be sustained only by a robust physical frame, and could be performed only by a well-balanced and active mind, guided by the highest principles, and acting under the influence of a determined will. For such a work we believe his mental and moral endowments to have been eminently fit; but, in his physical system, the necessary conditions were not supplied; the sword was too sharp for the scabbard, the energies of the spirit were too mighty for the clay, and the mortal coil was shuffled off. Shall we now say that his life was not sacrificed in the discharge of a high

and holy duty; and, shall we doubt that Heaven approved the offering? Every heart instinctively answers, no. The exigency demanded the sacrifice. His example was needed to show us, his pupils, what manner of spirit we must be of; with what forgetfulness of self we must devote ourselves to the noble work whereon we have entered; how, with an eye single to Truth and the Right, in spite of difficulties and discouragements, we must still labor on, in patience and in faith, believing that the harvest will surely come, whether we are among the reapers or not.

And, was the work of Mr. Tillinghast worth such a sacrifice? Did he, in his short life, achieve results at all commensurate with the time, the labor, and the life that were devoted to them? Let the appeal be made to every individual who ever enjoyed the benefit of his instructions. My brother, or my sister, whence came your higher views of life and its duties? Who opened to your mind a new world of intellectual life and moral perceptions, of which you had before never had a glimpse? Who stirred your soul to higher aspirations than you had ever felt, and roused it to nobler purposes than you had as yet formed? Who waked up within you a moral energy that, when you do not permit other influences to smother it, makes you ashamed of low views of duty, of feeble and ill-directed effort, and enkindles within you a glowing earnestness in your work? On this point, I am sure that language fails to express what is deeply and clearly felt in the heart of every pupil of his, who is with us to-day. We all feel that the *great* work which he did for us, that which we most highly value, is precisely that which can not be represented in speech. That higher teaching was not conveyed to us in words, and words can not impart it to others. If imparted at all, it must be by the sympathy of spirit with spirit. If, therefore, we would do for our pupils what he did for us, we must teach as he taught, by possessing ourselves the qualities with which we would have their characters adorned, and by entering upon our work with a zeal and an earnestness that will bring the minds of our pupils into sympathy with our own; remembering that only from the fullness of our own hearts, and the perfection of our own characters, can we have the instruction to impart; and, only by a glowing and energizing enthusiasm can we make it efficient upon the character of others.

Such, friends and fellow-pupils, so far as my imperfect ability could sketch him, in so brief a time, was the man at whose feet it has been our high privilege as well as our delight, to sit in the attitude of reverent and attentive listeners. I have endeavored to be strictly just, to state not only the precise truth, but also to present that particular

combination of truths that would give the justest and truest idea of the man. I have sought to weigh my words, to abstain from unwarranted statements, and excess of panegyric, and I am confident that my expressions fall below what you feel in your hearts. We all feel that we are cherishing the memory of no ordinary man, and that the language of an ordinary occasion is not adapted to our use to-day. It is not only our teacher that has fallen, but a standard-bearer in the great educational army. When we consider his exalted character, and the paternal relation in which he stood to us all, with what sincerity, and what loneliness of heart, are we ready to exclaim :—

“ He was a man, take him for all in all.
I shall not look upon his like again.”

On such an occasion as this, it seems eminently fit that the feelings which we have been for years cherishing, without an opportunity for public utterance, should be freely expressed. Let us then lay upon his grave the tribute of our respect and affection ; and, as we return to the scenes of our accustomed labor, let us learn the lesson of this experience, let us open our minds to receive and to cherish the influence that goes forth from the life and character of our departed friend and teacher, and let us see that our own lives and the teachings we impart, shall not be altogether unworthy of that which we have received.

V. ART.—ITS IMPORTANCE AS A BRANCH OF EDUCATION.

BY M. A. DWIGHT.

[Continued from page 418.]

GEMS. The engraving of stones, like the engravings of coin dies, was an art of gradual growth, having for its first object, the purposes of economy and traffic; that of sealing stores and treasures as well as documents. At the same time, metal and wooden seals were used with devices of little significance.

Many ancient signets were found in the form of cylinders, and were probably suspended about the person. As art progressed, signets were fashioned into rings, and worn upon the hand as an ornament, a custom which had its influence upon the dactyloglyphist, who with this stimulus, attained a degree of skill in his own department proportioned to other branches of formative art.*

The art of working in hard and precious stones advanced at a very early period, after the example of the Phœnician Babylonian stone cutters, from a rude incising of round holes, to the careful engraving of entire figures in the even antique style. Of the Babylonian sculptures, but few remain; therefore, little can be known of their style of art. According to Herodotus, every Babylonian had his signet, of these many are found, especially the cylinders in the neighborhood of Babylon, consisting of hard and precious stones, the chalcedony, hæmatite and agate; and although the use of these was transferred from the Chaldeans to the Magi, from the religion of Baal to the worship of Ormuzd, yet they might be understood and explained from Babylonian customs and usages. We can even yet recognize conjecturally, some of the chief deities of the Roman empire, which is however too little known to us to admit of detailed explanations. The workmanship of these cylinders is of various merit, often consisting almost entirely of round cavities, sometimes very careful and elegant. In design, the style corresponds very much with the monuments of Persepolis.

In the third period of art, the engravings of stones was so much improved, that the luxury of ring wearing, raised the art of the

* All rings were at first signet rings; then they became ornaments and badges of honor. Unengraved gems were also readily worn, and the engraved everywhere else applied.

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dactyloglyphist to the greatest height that it was capable of attaining in proportion to other branches of the formative art, although the accounts of writers do not mention the names of any artists of this class, except that of Pyrgoteles, who engraved Alexander's signet ring. In gems also, we occasionally find a composition and treatment of forms corresponding to the Phidian sculptures, but works of this description, in which the spirit of the school of Praxiteles is manifested, are far more numerous.

In the fourth period, from the 111th to the 158th Olympiad, the luxury in engraved stones was carried to a still greater height, particularly from the custom derived from the East, and were chiefly maintained by the court of the Seleucidæ, of adorning cups, lamps and other works in metal with gems. For this and other purposes, where the figure on the stone was merely for the purpose of ornament, and not to form impressions like a seal, the gems were cut in high relief, as cameos, for which variegated onyxes were preferred. To this class, belong the cups and goblets entirely composed of precious stones (onyx-vessels) which made their appearance at the same time. In this art were executed works wonderful for their beauty of design and technical perfection, particularly in the early stages of the period, when art was still animated by a higher spirit.

The work in precious stones is either *intaglio*, a depressed form, or *cameo*, a raised form. The principal object of the intaglio is, the impression; that of the cameo, ornament. For intaglios, transparent stones of uniform color were used; also, spotted and clouded. Of precious stones, so called, scarcely any were used but the hyacinth and amethyst. Many culled half precious stones were used, especially the numerous varieties of agates. Among these were the highly esteemed cornelian, the chalcedony, and the *plasma di smeraldo*. For the cameos, variegated stones were used, such as the onyxes, consisting of smokey brown and milk white layers, and the sardonxes, which added a third layer of cornelian. These were also frequently produced by artifice, as well as similar kinds of stones, which oriental and African commerce brought to the ancients, of surprising and now unknown beauty and size.

Passing from the engravers hands, stones designed for signet rings, went to the goldsmith who set them. The form of the sling was the favorite one. Although in the signet-ring, the device was certainly the principal thing, the name is sometimes added; and here it must be assumed, that a name, which readily strikes the eye, must rather be referred to the possessor than to the artist of the gem. The fact that both States and individuals had seals, accounts perhaps for the

great correspondence of many gems with coin-types; thus also the Roman emperors with a head bearing their own likeness, with which coins were at the same time stamped. The frequent application of engraved stones to the decoration of drinking cups and other utensils (a practice derived from Byzantium by the Romans) was continued down to the middle ages. Even now, antique gems must sometimes be sought for in church vessels. In the engraved vessels formed entirely of gems, which are connected with the class of large cameos, many works, admirable for the extent and difficulty of the workmanship, have been preserved, although none of them belong to the time of a pure taste, and a genuine Hellenic art.

As a substitute for the precious stone of the signet-ring, glass was used among the less wealthy, and for that reason the imitation of gems and cameos in glass pastes was very widely diffused in antiquity, whereby many very interesting representations have been preserved to us in this class of monuments. According to Pliny, the glass was wrought in a three-fold manner; sometimes blown, sometimes turned, and sometimes engraved; the first and third process are also found united. Although perfectly pure and white glass was far from being unknown to the ancients, they every where manifested a preference for colored, especially purple, dark blue, and green, and, for an iridescent splendor. They had also beautiful cups and goblets of colored glass, which were sometimes made of variegated glass, and sometimes ingeniously composed of glass and gold.

Among the ancients, the Egyptians, who made great use of the signet, even to the sealing of their sacrifices, practiced gem sculpture with great success, both in intaglio and in relief; but more particularly the former. Those preserved to our times are for the most part called *scarabaei*, from the figure resembling a beetle, and are of green jasper, cornelian and calcedony.

The Greeks, before the decline of their country, surpassed all others in the sculpturing of gems and precious stones. The same skill and taste that characterized their architecture and sculpture, is exhibited in all their arts, more particularly gem sculpture. Theodore of Samos, who engraved a lyre on an emerald belonging to the King Polycrates (556 B. C.) was one of their most famous engravers. In relation to this extraordinary gem, we have the following anecdote. "Polycrates was remarkable for the good fortune which for a long period constantly attended him; so much so, that Amasis, king of Egypt, his friend and ally, advised him by letter, to break the course of it, by depriving himself of some one of his most valuable possessions. This advice was in accordance with the heathen belief, that a

long career of uninterrupted felicity was sure to terminate in the greatest misery. Polycrates, having resolved to follow the counsel of Amasis, selected an emerald ring, which he was accustomed to use as a signet, and which he regarded as his rarest treasure, embarked on board a galley, and, when he had reached the open sea, consigned this ring to the waves. Strange to relate, about five or six days afterwards, while Polycrates was still grieving for the loss of this costly jewel, a fisherman brought to his place a large fish which he had caught, and on opening it, the lost ring was found. Polycrates informed Amasis, who immediately broke off his alliance with him, through fear of sharing the evil fortune with which he was certain that the ruler of Samos would be visited." The interest in this work has been newly revived by the announcement that "a vine dresser of Albano, near Rome, has found in a vineyard the celebrated ring of Polycrates. This treasure, the history of which is familiar to all readers of Schiller's ballads, was brought to Rome after the death of Polycrates, 522 years before Christ. It was seen also by Pliny, and mentioned by him. The Emperor Augustus placed it in a golden case, and for safety, deposited it in the Temple of Concord. The stone of the ring is of considerable size, and oblong in form. The engraving on it, by Theodore of Samos, the son of Telecles, is of extraordinary beauty. It represents a lyre with three bees flying about; below on the right, a dolphin; on the left, the head of a bull. The name of the engraver is inscribed in Greek characters. The upper surface of the stone is slightly concave, not highly polished, and one corner broken. It is said that the possessor of this ring has been offered \$50,000 for it, (by a private individual) but has declined it, expecting to make a more profitable bargain with the Emperor Alexander."

This art was carried from Greece to Rome, where Dioscorides engraved the head of Augustus in so masterly a manner, that the succeeding Emperor advanced it to the honor of being the imperial signet. Among the later Emperors, the luxury of wearing gems about the person was carried to an extravagant height. Juvenal informs us, that there was a distinction between the weight of the summer and winter ring; and Martial wittily reminds a freedman, who indulged this folly to a ridiculous extent that the size of his ring was better suited to his former condition than his present, resembling more the link of a fetter than a personal ornament. Heliogabalus was attacked by Lampridius for covering his shoes and stockings with engraved gems, as if the elaborate work of the gem-sculptor could be admired when placed on the feet.

Important materials for the history of art are furnished by gems. Dioscorides, who engraved the head of Augustus which the Emperor himself used as a seal, was the most distinguished worker of the kind in *intaglio*. But the more important than the stones preserved under his name, is a series of cameos that represent the Italian and Claudian families at particular epochs; and besides the splendor of the material, and the dexterity in using it, they are in many other respects deserving of admiration. In all the principal works of the kind, the same custom prevails of representing those princes as divine beings presiding over the world with benignant sway, and as present manifestations of the most exalted deities. The designs are careful and full of expression, although they do not exhibit the spirited handling and noble forms which distinguish the gems of the Ptolemies; on the contrary, there is here, as well as in the reliefs of the triumphal arches, and many statues of emperors, a peculiarly Roman form of body introduced, which is distinguished from the Grecian by a certain heaviness.

The royal collection at Paris, and the British museum of London, contain numerous ancient engraved cornelians (which was the favorite stone for that purpose) of a fine description. Many of the latter were found in the field of Apulia, where Hannibal defeated the Romans so signally. Among them were many belonging to the higher classes, and Hannibal afterwards sent three bushels of rings to Carthage as a token of his victory.

The famous Portland vase, was probably formed in the same manner as the glass imitations of gems. The figures upon it are of a white opaque glass, raised on a ground of deep blue glass, which appears black until placed against the light. The figures are of exquisite workmanship, and antiquarians date its production several centuries before the Christian era, as sculpture unquestionably declined after the time of Alexander the Great. It was long in the possession of the Barberini family, of whom it was purchased for one thousand guineas, by the late Duke of Portland.

Mithridates, whose kingdom was the great mart of precious stones, had, according to Appian, three thousand cups of onyx with gold chasings. It is said, that Alexander the Great, in his eastern conquests, obtained immense treasures in cups and goblets, set with engraved gems. The noblest work of this kind now known, is the Gonzaga cameo, in the possession of the Russian Emperor, with the heads of Ptolemy the Second and the first Arsinoë. According to Visconti, it is nearly half a foot long. Winckelman has published an enumeration of some of the finest gems, and among them is an exquisite cameo of Perseus and Andromeda, in such high relief, that

nearly all the contour of the figures, in the most delicate white, are detached from the ground. It belonged to Mengs the painter, at whose death it was purchased by the Empress Catharine, of Russia, for three thousand Roman crowns; and if it were again thrown into the market, probably none but those who hold royal treasuries could compete for the possession of so great a treasure of art.

While learning how true artistic skill creates wealth, how these productions of nature taken in the rough state may be so enhanced in value by the skillful hand, and cultivated taste of the artist, it may be asked, if making precious stones, and precious metals still more precious, thus adding treasure to treasure, is all that the ancient artist's accomplished? By no means. They were the faithful, and for many successive periods, the only historians. Each one of every age contributed his part towards impressing upon the temples, tombs and monuments the true and imperishable records of the religious worship, domestic habits, social customs, and historical events of his own nation in his own day;—and it is to these records that the historians of the present time refer for information respecting the great nations of antiquity, that have either lost their own traditions, or have forever perished from off the face of the earth; nay, more—these same records, made by artists, including the orders of architecture, the peculiar forms of temples, the gems, coins and medals, in their designs and styles of execution, plainly and unmistakeably indicate the taste of a people, their progress in cultivation, their power and resources, and, at the same time delineate the characteristic distinctions that so decidedly mark nationality, with a truthfulness and permanence that belong to no written records.

Antiquarians and learned men have in vain endeavored to decide in what country, and among what people the arts first originated. The theory has been, that they had their beginning in some one nation from whom they were derived by others. Yet, the works of each differ decidedly in character. The Babylonian structures were of vast dimensions, but were not like the Egyptian pyramids, built to stand "till time shall be no more." The taste of the Phoenicians was for richness of color and of ornament. The Chinese are sometimes curious and elaborate, and again, very simple and beautiful, exhibiting a variety among their works of art, that shows great power of invention. The Greeks, wherever they may have received their first ideas of art, cultivated it, as they did all other pursuits, on scientific principles. This enabled them to systematize the theory, and establish principles for the practise of the arts which are now considered the standard by all cultivated nations.

VI. BENEFACTORS OF EDUCATION AND SCIENCE.

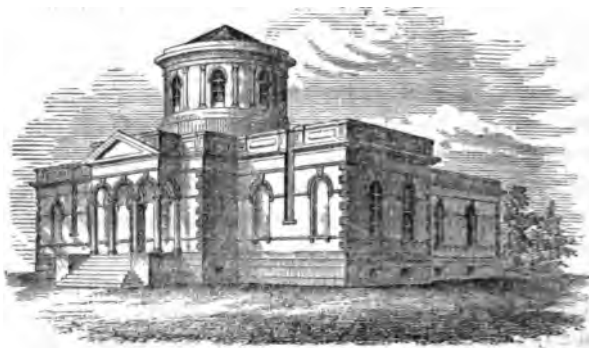
DUDLEY OBSERVATORY AT ALBANY, NEW YORK.

THE inauguration of the Dudley Observatory at Albany, on the 28th of August, 1856, is an event of no ordinary interest, whether regarded simply as commemorating the completion of a beautiful memorial of affection, a monument of large hearted liberality, or as the opening of another temple of science, with performances and an audience worthy of the occasion. The ceremony was only the culmination of events which have been in progress for several years, and the observatory is in all probability, only part of a great American university, which will have its seat at Albany.

During the summer of 1852, several influential gentlemen of Albany, became impressed with the conviction that something more should be accomplished by the state of New York in the cause of popular education. Though aware that the system of public instruction, embracing common schools, the academies and colleges has answered all the purposes which their respective founders had in view, still there was a deficiency of adequate facilities for prosecuting the higher branches of education to their fullest extent; in consequence of which, young men were driven to foreign countries for advantages which should be furnished them at home. This suggested the idea of a National University, an institution possessing a character that would meet the exigency in question. Several public meetings were held at Albany, in relation to this matter in the winter of 1852-53, which many distinguished gentlemen and scholars from other states attended, and favored with their sympathies and counsels. As a result of these deliberations, and as a part of the great project, it was resolved to establish, at the capitol of the Empire State, an Astronomical Observatory, with such instruments and agents as would meet the present demands of astronomical science.

As an earnest of the success which should ultimately crown the efforts of the gentlemen who especially committed themselves to the prosecution of the enterprise, they received from Gen. Stephen Van Rensselaer, a donation of several acres of valuable land as an appropriate site for the contemplated building. The plot of ground thus dedicated to the interests of science, is situated on the northern side of the city of Albany, and within its corporate limits, and is peculiarly adapted to the purpose in question. It rises with an elevation so gen-

tle as to allow of an easy ascent, to the height of about two hundred feet above the level of the river, terminating in a beautiful plateau sufficiently extensive to meet every desirable object connected with the contemplated edifice. No sooner had this point been gained, than another donation was announced, of an amount which, at the time, was considered nearly if not quite sufficient, to erect and complete the Observatory building. Mrs. Blandina Dudley, a lady distinguished for wealth and liberality, in token of respect for the memory of a devoted husband, cheerfully appropriated \$12,000 to the enterprise; in consideration of which, and as a testimony of their gratitude, the trustees resolved that the Institution should be called **THE DUDLEY OBSERVATORY**. The favor with which the enterprise had been thus received, led its friends to hope that a yet more extensive plan might be entertained, and that a building might be erected of more ample dimensions and of more perfect appliances than was at first contemplated, requiring at the same time a more liberal outlay of capital. In this they were not disappointed. Several gentlemen at once contributed, until the sum of \$25,000 was secured. In the winter of 1853, an act of incorporation was granted by the legislature, by which the government of the institution is vested in a board of trustees, of whom Stephen Van Rensselaer is President, T. W. Olcott, Vice President, and J. H. Armsby, Secretary. The Scientific Council who have charge of the Institution, are Prof. A. D. Bache, Supt. U. S. C. S.; Prof. Benjamin Pierce, Cambridge; Prof. Joseph Henry, Smithsonian Institution; Dr. B. A. Gould, of U. S. C. S. The building was commenced early in the spring of 1853; upon a plan designed by Prof. Mitchel, and Prof. Sears C. Walker, and under the supervision of Prof. G. R. Perkins, and completed during the following year. The following cut* exhibits the exterior view of the Dudley Observatory as originally finished.



* We are indebted for the use of this cut, to Harper & Brothers—publishers of Prof. Loomis' "*Recent Progress of Astronomy*," in which there is an interesting and illustrated sketch of all the Observatories of the United States.

The following diagrams exhibit the external appearance, and the interior arrangements of the structure as prepared to receive the instruments.

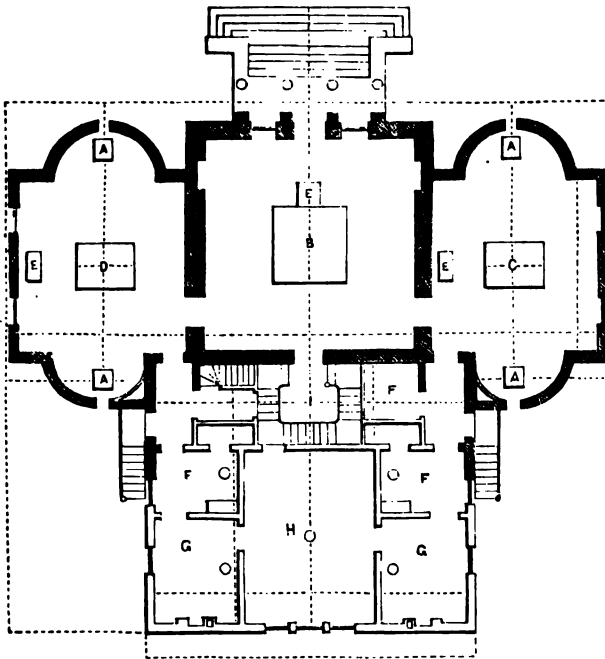


Fig. 2. GROUND PLAN OF DUDLEY OBSERVATORY.

A.—Collimators.
B.—Heliumiter.
C.—Transit Instrument.
D.—Olcott Meridian Circle.

E.—Clocks.
F.—Chronographs.
G.—Computing Rooms.
H.—Library.

The ground plan of the building is in the form of a cross, with a front of 84 feet, by 72 feet in depth. The center hall through which passes the great pier for the heliometer, is 28 feet square; the east and west wings, which are designed for the meridian circle and transit instruments, are each about 26 feet square, with a semi-circle area, in front and rear for collimator piers, and provided with the usual openings in the meridian. The rear or north wing is about 40 feet square, divided into a library room of 27 by 23 feet, two computing rooms of 14 by 16 feet, and several small rooms for magnetic apparatus, for recording observations, &c. The heliometer room, in the second story is of a circular form of 24 feet diameter. The revolving portion is in the form of a tower, moving by ingenious machinery. The main pier for the heliometer was commenced seven feet below the bottom of the cellar, with a base of 15 by 15 feet, resting on a bed of concrete and rubble of 24 inches thick. The size of the pier was gradually reduced, up to the level of the cellar bottom, where it is 10 by 10 feet, and was continued of this size throughout the rest of its height. The whole is built in the most substantial manner, of large stone, well bedded. The piers in the circle and transit rooms and for the clocks and collimators are constructed with the same care, of similar material. The walls of the building are of great thickness, and made of the best quality of pressed brick. The basement story, the window sills, caps, corner blocks, belt courses, and portico are constructed of dressed free stone. The library room and computing rooms of the north wing are warmed by heated air from a basement furnace, great care being taken to cut off all heat from the main building. Both the circle and transit rooms have been recently enlarged under the directions of Dr. Gould, giving a circular form to the front and rear walls to make room for collimator piers, and for much larger instruments than were at first designed. A beautiful marble bust of Mr. Dudley, executed by E. D. Palmer, is to be placed opposite the principal entrance.

At the Providence meeting of the American Association for the Advancement of Science, in 1855, Professor Bache, Superintendent of the United States Coast Survey, proposed to Dr. Armsby the establishment of a great heliometer at Albany, and to furnish observers from the Coast Survey to take charge of it, provided the requisite funds could be furnished for its purchase. Dr. Armsby guaranteed the amount necessary, and wrote Mr. Olcott to this effect. Mr. Olcott read the letter to Mrs. Dudley, and she cheerfully contributed \$6,000 for the purpose. This sum was soon increased to \$8,000, and subsequently to \$14,500. Mr. Olcott at the same time contributed \$5,000 for the purchase of the splendid meridian circle, by Pistor & Martina,

of Berlin. This is the largest instrument of the kind in the world, and has been named by the Scientific Council in honor of its generous donor, The Olcott Meridian Circle. A fine transit instrument, also by Pistor & Martins, ordered by Prof. Bache, occupies the west wing of the building, the Olcott circle the east, and the Dudley heliometer is to be placed in the central tower. Several valuable clocks, barometers and thermometers have been ordered in France and Germany. The chronographs are made by the celebrated artist, Mr. Farmer, of Boston.

The construction of the heliometer has been confided by Dr. Gould, after visiting the workshops of Europe, to our eminent countryman, Charles A. Spencer, who has just returned from a European tour to visit the best observatories of England and the continent.

At the inauguration of the Dudley Observatory, on the 28th of August, 1856, the following letter, addressed to the trustees by Mrs. Dudley, was read.

ALBANY, August 14th, 1856.

TO THE TRUSTEES OF THE DUDLEY OBSERVATORY.

GENTLEMEN—I scarcely need refer in a letter to you, to the modest beginning and gradual growth of the Institution over which you preside, and of which you are the responsible guardians. But we have arrived at a period in its history, when its inauguration gives to it, and to you, some degree of prominence, and which must stamp our past efforts with weakness and inconsideration, or exalt those of the future, to the measure of liberality necessary to certain success. You have a building erected, and instruments engaged of unrivaled excellence, and it now remains to carry out the suggestion of the Astronomer Royal of England, in giving permanency to the establishment. The very distinguished Professors, Bache, Pierce and Gould, state in a letter which I have been permitted to see, that to expand this Institution to the wants of American Science, and the honors of a National character, will require an investment which will yield annually not less than \$10,000. And these gentlemen say in the letter referred to—"If the greatness of your giving can rise to this occasion, as it has to all our previous suggestions with such unflinching magnanimity, we promise you our earnest and hearty co-operation, and stake our reputations that the scientific success shall fill up the measure of your hopes and anticipations."

For the attainment of an object so rich in Scientific rewards and National glory,—guaranteed by men with reputations as exalted and enduring as the skies upon which they are written, contributions should be general and not confined to an individual or a place.

For myself, I offer as my share of the required endowment, the sum of \$50,000 in addition to the advances which I have already made, and trusting that the name which you have given to the Observatory may not be considered as an undeserved compliment, and that it will not diminish the public regards, by giving to the Institution a seemingly individual character.

I remain, gentlemen,
Your ob't serv't,
BLANDINA DUDLEY.

The sum thus gracefully tendered swelled the subscription of Mr. Dudley to \$76,500—one of the largest contributions to the advancement of science ever made in any age or country during the life time of the donor. When the reading of the letter ceased, the vast assembly arose simultaneously to their feet, and greeted the noble and generous donor with the most enthusiastic cheers.

INAUGURATION OF THE DUDLEY OBSERVATORY.

The ceremonies of inauguration of the Dudley Observatory took place on the 28th of August, 1856, under a tent in the grounds of the Albany Academy, in the presence of over five thousand people, comprising the largest representation of American science and literature, ever witnessed. We present to our readers a large portion of the interesting and eloquent addresses made on the occasion.

Ex-Governor Hunt, in opening the exercises of the inauguration pronounced the following eulogy on Senator Dudley, in whose honor the observatory was named, and in whose commemoration the donations of Mrs. Dudley, had been made.

CHARLES E. DUDLEY was a man whose sterling merits would have ensured a high place among the first citizens of Greece or Rome, in the virtuous age of either Republic, when integrity and patriotism were the only passports to popular eminence. Before proceeding to enlarge upon his character, permit me to observe that he was the friend of my youth, and that many years of intercourse, during which it was my good fortune to receive numerous proofs of his kindness, gave him a strong hold upon my affections. I was indebted to him for wise counsels, for generous patronage, and above all, for a bright example of manliness and honor which animated his whole life and conduct. The memory of these personal relations revives in my breast feelings of gratitude and devotion which time cannot extinguish. Mr. Dudley's career presented a beautiful illustration of the elevating tendency of our free American institutions. Nature had endowed him with a clear vigorous intellect, and high moral susceptibilities. These characteristics were strengthened by timely culture and the purest social influences. In early life he enjoyed unusual advantages for foreign travel, and became conversant with the manners and institutions of other countries. The principles of Commerce, in its grand relations to the public wealth and prosperity, and as a peaceful agency of human progress and civilization, became his favorite subject of investigation. While his acquirements were varied and extensive, he made himself specially familiar with the history of Commerce and Navigation, in ancient and modern times; with the causes which affect their growth and decline; with the practical working of the commercial systems adopted by different nations; and his rich stores of information on these subjects enabled him to render important service to the commercial interests of his own country. His attainments in this department of political economy, and a remarkable faculty for discrimination in deducing from general theories safe practical conclusions, with reference to the actual condition of affairs, qualified him to discuss some of the most difficult questions of commercial policy with a convincing clearness of elucidation. In my intercourse with the world, I have rarely met a statesman whose knowledge on this class of subjects was more complete, or whose observations were more comprehensive and profound.

After devoting some years to the pursuits of commerce, in which his labors were rewarded by abundant success, Mr. Dudley retired from active business and became a citizen of Albany, where he was allied by marriage with one of its most respected and influential families. Among the people of this city, where he passed the remainder of his days, and where his honorable discharge of duty in every relation of life made him "observed of all observers," it would seem unnecessary to dwell upon the virtues which adorned his character, and elicited repeated expressions of public regard and confidence.

In a community so appreciative of merit, it was impossible that such a man should remain in tranquil retirement. From time to time he was called by his fellow citizens to stations of eminent dignity and importance, and he never failed to discharge his trust with fidelity and capacity. He was chosen more than once to preside over the municipal administration of this city, as its Chief Magistrate; and in this position he rendered services which are still remembered with grati-

tude. As a member of the Senate of New York he identified his name with beneficent measures which have contributed largely to the intellectual progress and material prosperity of the State. In him our system of internal improvements found a firm and enlightened supporter. He was an effective advocate of the Erie Canal, at a time when that magnificent undertaking was denounced as visionary, and its completion placed in jeopardy by a strong and determined opposition. But I regard it as his highest merit, as a legislator for the State, that he was a zealous and constant friend of the cause of education. Every measure calculated to diffuse the blessings of knowledge, whether by the extension of our common school system or the creation of new institutions of learning, received from him an earnest and powerful support.

At a subsequent period Mr. Dudley was elected to a seat in the Senate of the United States; a station which he filled with honor to himself and advantage to the country. He was one of the most dignified and respected members of that body at a time when Clay and Webster and Calhoun gave lustre to the Senatorial office. On questions affecting the commercial interests of the country, his thorough knowledge of the laws of trade gave an important weight to his opinions. As a Senator he was distinguished among his peers for ripe intelligence, true patriotism and a spirit of candor which inspired confidence in the rectitude of his motives and the soundness of his judgment. It frequently occurs that these sterling qualities are of more value to the country, in its legislative bodies, than the most brilliant displays of impassioned eloquence. It was Mr. Dudley's fortune to act a prominent part, on the stage of public events in times of intense political excitement. Though decided in his opinions, adhering always to his avowed principles with unyielding firmness, party spirit never ventured to assail the integrity of his conduct, or to question the purity of his intentions. He cherished warm political attachments, yet was he no partizan in the ordinary sense. If he loved Cæsar much, he loved Rome more, and regarded the welfare of his country as paramount to the interests of any party.

On several occasions he exhibited a lofty spirit of independence, in defiance of the most powerful political influences. In every relation, public and private, he was governed by a controlling sense of justice, and discharged his duty with that true moral courage which rejects all fear, except the fear of doing wrong. His personal deportment exhibited that blending of dignity and courtesy which inspires a mingled sentiment of homage and affection. In all the intercourse of life he displayed a refined sense of propriety. Naturally modest and retiring, he avoided no duty, and shrank from no responsibility which a statesman or a citizen can be justly required to assume. He sought no prominence, but accepted the honors which were conferred upon him as a trust for the benefit of his fellow-men.

This is a brief and imperfect outline of the character and career of Charles E. Dudley. Fifteen years have passed away since he departed this life, loved by all who knew him, and most by those who knew him best; honored by his fellow-citizens, and mourned by the country which he had so faithfully served. By the blessing of Providence, his beloved and venerable widow, the partner of his joys and sorrows, and the object of his fondest affections, still survives. To her bereaved spirit, during the long period of her loneliness, the recollection of his virtues and life-long devotion to her happiness, and the hope of re-union in the realms of immortal felicity, have been a source of unfailing consolation.

"Like lamps in eastern sepulchres,
Amid my heart's deep gloom,
Affection sheds its holiest light
Upon my husband's tomb;
And as those lamps, if brought once more
To upper air, grow dim,
So my soul's love is cold and dead
Unless it glow for him."

To her has been reserved the pious office of rearing an appropriate monument to his memory. How generously, how nobly this sacred duty has been performed, will be recorded and remembered during all future time! The recollection of her constancy and munificence will be cherished by coming generations, until the earth shall give up its dead. Her tribute of affection to a departed husband is a graceful offering upon the altar of Science and Truth. In preparing a sepulchre and

raising a tomb to perpetuate his memory, she has built an edifice which points to the heavens, and created an instrumentality which shall unfold the mysteries of the spheres and display the wonders of the firmament to mortal vision. By rendering this suitable and deserved honor to his fame, she has immortalized her own. The Dudley Observatory will forever associate the names of both with the highest glories of science, and the most exalted manifestations of beneficence.

REMARKS OF DR. B. A. GOULD.

LADIES AND GENTLEMEN :

The duty has been imposed upon me, by those whose wishes are sufficient commands, and whom it would be more than ingratitude to refuse, of presenting to you a simple statement of the efforts which have been recently made toward the establishment of the observatory of Albany; a temple of science which is not only, as we hope, to render the name of this munificent and hospitable city as classic as it is dear to all our hearts, but at the same time to enshrine the memory of a noble name, and of an affection far more worthily expressed than that of an Artemisia. History tells of Mausolus, a monarch remarkable for his exalted character and his personal beauty. His stricken widow, after falling for a while into the deepest affliction, rose finally above her sorrow, and reared that splendid monument known as a wonder of the world. She gave to it her husband's name, and even now, when thousands of years have passed away, the Mausoleum is a word familiar to your ears. But a more than Artemisia is here—a more than Mausoleum crowns you verdant summit, from within whose walls shall go out light and truth unto the nations. Such deeds as these demand no common tongue to do them honor—and you know whose tongue is enlisted in their praise. Nor will I forget it. Be mine the simple task to tell the simple tale, and let the eloquence of truth be its simple ornament.

The aspirations of our countrymen for some high educational seminary in the land, that shall receive American youth where the colleges leaves them, and afford the same facilities for the highest culture in specialities that the colleges offer for the general acquisition of information, refinement and taste;—and which shall supply to our own young men the combined sources of knowledge, which they have hitherto been compelled to seek on the other side of the ocean, have within a few years found expression in various places; but nowhere has the effort to bring the aspirations to fulfillment been so vigorous as in this city of Albany. During the summer of 1852, several public meetings were held here in reference to this great end, and perhaps it is not too much to believe that, had not the extraordinary political excitement of the succeeding winter suddenly thwarted the plans of the friends of a national university, the legislature of this state, assembled in yonder capitol, would have enacted into a law that bill, which they had already discussed, and which would have given to this capital city a high pre-eminence as the western home of science, letters and art. But the effort has not been fruitless, and as a part of that great scheme which may, let us hope, yet be carried into effectual reality, it was resolved to found an Astronomical observatory; and the appeals to the liberality of individuals met with a ready and cheerful response. Three gentlemen, Messrs. Thomas W. Olcott, Wm. H. De Witt, and Ezra P. Prentice, immediately contributed \$1,000 each, and Mr. De Witt subsequently increased his subscription to \$1,500. Gen. Stephen Van Rensselaer contributed several acres of valuable land as an appropriate site for the building. After this, Mrs. Blandina Dudley—a name now known to you all as synonymous with munificence and patriotism, subscribed the sum of \$12,000 in token of her respect for the memory of a devoted husband; and in the act of incorporation, the Institution received by vote of the Trustees, as a testimony of their gratitude, the name of Dudley Observatory. Mrs. Dudley mentions it as among her most pleasing reflections, that her distinguished, excellent and affectionate husband cherished during his life-time a special interest in this department of science, and that no appropriation could be made by her more consonant with what his tastes and wishes would undoubtedly have been. The impulse thus given to the plan, prompted to still greater interest; and many more gentlemen came forward with contributions until the total sum of \$25,000 was secured, with which to erect a building on a larger scale than had been originally contemplated. By the act of incorporation the government of the institution is vested in a board of trustees, of which Gen.

Stephen Van Rensselaer is President; and in order that the building might be in all respects accordant with the present demands of astronomy, the plans were drawn by Messrs. Walter & Wilson, under the direction and supervision of Prof. Mitchel, of Cincinnati, a gentleman who needs no encomium here. The erection of the building in conformity with these plans was intrusted to the supervision of Prof. George R. Perkins, then a resident of Albany, who gave to it his unremitting attention. The building is in the form of a cross, of 84 feet front by 72 in depth,—a tower with revolving cupola rising from the centre, for the reception of the heliometer, or an equatorial telescope, should one hereafter be obtained. The central portion is 28 feet square; the east and west rooms, which are for the meridian instruments, are each about 23 feet square, but large semi-cylindrical projections of 6 feet radius are now building, both north and south, for the reception and protection of collimator piers. The north wing, which is about 40 feet square, contains a room for the library, together with four small rooms, two of which were intended for the use of computers. The cylindrical tower is 22 feet in diameter, revolving upon iron balls.

The foundations of this edifice were laid in the spring of 1853, the building completed within the year, and the charge of the whole enterprise entrusted to Prof. Mitchel. But circumstances rendering him unable to take charge of the Observatory at that time, the building remained for two or three years unoccupied. Still the seed already planted had swelled, germinated, and taken deep root. It has been said that still waters run deepest; and while the Observatory building sat placidly upon the beautiful Van Rensselaer hill, like an uncrowned queen, the hearts of the citizens of Albany were expanding to the reception of that great affection for learning, science and patriotic effort, which characterizes them before the world to-day. The Law-School of the University of Albany was organized, and the Medical School entered upon its new life;—each of these, like the Observatory, forming in name and nature, if not in organization, a part of what we trust may one day become the great National American University.

Thus stood affairs one year ago, at the Providence meeting of the American Association. And now I come to the mention of a name whose sympathetic influence calls up all the generous feelings of the heart, a name which I cannot lightly utter, for it belongs to a man whom to know is to love, and to mention is but to praise. It is his whose agency is evident in all good works; whose thoughtfulness is conspicuous in all kindly actions; his, to whom is in great part due the establishment of many a noble institution in this city of his adoption and his love, forming an imperishable monument of his public spirit; his, whose efforts were among the most untiring in behalf of the University, his, whose mild and gentle persuasiveness, whose modest, retiring, disinterested zeal conferred on this Association a priceless boon under the form of asking one, when he persuaded it to disregard all precedent by returning after the expiration of a single lustrum, and holding now for the second time its session in this great-hearted capital. There is no need of saying that this name is JAMES H. ARMSBY. God bless him! for he is blessing God's earth, and the world is better that he lives in it.

Dr. Armsby came to Providence a year ago, bearing the invitation from Albany that the Association would hold the session of 1856 in this city. Prof. Peirce was about the same time communicating to astronomers the results of his investigations relative to the determination of the longitude by means of occultations of the Pleiades, and he dwelt upon the great need of fine and precise measurements of the relative positions of the numerous stars of this group. The Superintendent of the Coast Survey had approved this plan and adopted it, as essential in his work. This was enough for Dr. Armsby; he saw in it a means of usefulness for the Dudley Observatory, and on learning that a heliometer was the instrument most appropriate for the class of observations required, he guaranteed upon his own responsibility that Albany would provide one, although none yet existed within the United States. He immediately hastened to Newport to confer with that friend of all noble enterprises, the Hon. John V. L. Pruyn. On finding that Mr. Pruyn had left Newport, he returned to Albany, and after farther conference with Mr. Olcott, came back to Providence with a confirmation of his guarantee, provided that the Coast Survey would take for a while the direction and control of the Observatory for its observations. Within ten days several meetings of public-spirited citizens were held in Albany, which resulted in my departure for Ex-

rope, provided with both the authority and the means of obtaining several instruments of the first class, and proud not merely of being able thus to contribute a humble mite towards the great work, but of the tale which I might tell, and of Albany a city of the western continent. A scientific council was appointed by the Trustees, boasting the great names of Bache, Peirce and Henry. Mrs. Dudley increased her claim to the gratitude of the Observatory and of all lovers of science, by offering \$6,000, the estimated purchase-money for the heliometer, and a day or two after, in a beautiful letter to the trustees, she increased the donation to \$8,000—or more if needed. Two other gentlemen, through Thomas W. Olcott, Esq., became responsible for a meridian-circle, to be provided, without any limitation as to expense, and Prof. Bache empowered me to order for the Coast-Survey, a transit-instrument of the best possible construction which could be devised. The Hon. Erastus Corning of this city subscribed \$1,000 for providing the Observatory with time, and Henry Q. Hawley, Esq., volunteered to supply the apparatus for making and distributing gas according to the new and admirable method of Mr. Aubin. This new and unexpected liberality was inspiring, electrifying. The occasion had no sooner arrived than the ideas and aspirations of Albany grew to meet it. It made one prouder, if possible, while standing on the eastern continent, to call himself an American. The meridian-circle and the transit-instrument were ordered in Berlin. They are of unsurpassed magnitude, and of a new construction, the chief points of which have already been presented to the physical section of the Association which has this day adjourned. And it was my high privilege on that occasion to become the vehicle of the public announcement, that the trustees, at the instance of the Scientific Council, had given to that new and exquisitely beautiful meridian circle the honored name of Olcott, which is already engraved upon it in deep and ineffaceable characters, to endure so long as the instrument itself exists. Not that the name needed the chisel, but that the trustees felt it due to themselves to find some outlet for their overflowing admiration and respect. These instruments are probably already on their way. The sidereal clock was ordered in Altona, and is of a construction still more peculiar than that of the meridian instruments. It will soon be here and be described. The clock for mean time has been made by our accomplished fellow-citizen, Mr. Farmer, of Boston. Its pendulum has no weights, and needs no winding.

Henceforth the visitors to the Observatory will find, on entering the door, a deep niche in front of them, in which will be placed the elegant bust of Charles E. Dudley, sculptured by an Albany artist, the inimitable Palmer, and dedicated by an affectionate widow to the memory of Dudley and the advancement of astronomy. On the right is the great marble dial, three feet square, which shows the Observatory time, beat by the beautiful electro-magnetic pendulum which is swinging on the left, and which is not only to supply this city with its time correct to the fraction of a second, but is to flash it along the electric wire till its little tick be heard upon the lakes and at the ocean, and in all the railroad stations lying between—the stay of the navigator, the guardian of the traveler, the safeguard of human life, and the promoter of human welfare on land and sea. An elegantly engraved marble inscription below it commemorates the name of the donor.

A beautiful chronograph already completed by Mr. Farmer and constructed in conformity with his own ideas on a new and improved principle, is now in the Observatory, to be followed by at least two more. Dials in every room will telegraphically record the time indicated by the normal clock imbedded in the massive pier below; while the Corning clock sends out the corresponding mean or civil time, to the north, south, east and west. Of the scientific bearings of all this, I do not speak, for my duty at present is historical alone.

Of the heliometer nothing has as yet been told you. This is the most delicate, complicated and difficult of construction of all the implements of the astronomer. There seemed but one European artist to whom such a work should be intrusted; and the common voice of the astronomers of every nation pointed to the brothers Repsold of Hamburg, the builders of the magnificent heliometer of Oxford, by far the first of its class. Ladies and gentlemen, the voice of Europe directed with one accord to Repsold. Not so the voice of America. Knowing the splendid triumphs of German and French mechanic art, knowing the exalted reputation that most worthily adorns Repsold's name—the Trustees of the Dudley Ob-

servatory have yet confided the construction of this exquisitely delicate instrument to our countryman, and the great Dudley Heliameter, (for which Mrs. Dudley, who had so munificently raised her \$6000 to \$8,000, has now raised the \$8,000 to \$14,500,) is to be built by our countryman Spencer, here in this city of Albany. Ladies and gentlemen, let me assure you, here in the presence of these five thousand witnesses, on this solemn occasion, with the full sense of the responsibility before the whole scientific world which the declaration entails, let me say to you, that the trustees of the Dudley Observatory will never regret it. We have been long indebted to Europe—it is time that Europe should be indebted to America. Mr. Spencer has traversed the European continent since May last, and examined the chief triumphs of instrumental art. He has met, like his countrymen who have preceded him, with a cordial welcome from the great hearts of men like Airy, Johnson, Challis, Argelander, Struve and Encke; and found the open hand of friendship extended to the new star in the terrestrial constellation. The hearts of the astronomers of the old world are beating with us to-day and now. Johnson, Argelander, Hansen, Struve, Peters, know the day and hour, and while we think of them and their cordial aid and fellowship with respectful affection, as we do now, they are thinking of us here, and sending us their unseen, but not unfelt, sympathies and congratulations.

Thus stands the Dudley Observatory to-day, the day of its inauguration. The enlargement of the building needs but a few weeks for its completion. By that time the meridian-instruments will have arrived, and the clocks will be sending their mystic signals to all the dials, even as the Corning clock now ticks above my head. The chronographic apparatus and the heliameter have been ordered, and the means provided for their construction.

Ladies and gentlemen, I shall be pardoned for so long detaining you from the eloquence which we all know to be in store from the golden-mouthed scholar, who has at so much sacrifice come hither to contribute the splendid offering of his oratory. Let me close with a single remark.

The implements are now at hand. But they must be used. Where are the observers, the computers, the books, the houses? Where is the Observatory to look for the means of publishing its results, when once attained? Ladies and gentlemen, the efforts made thus far, must be considered but the beginning—yet as the citizens of this state, and of this, its capital city, have never thus far failed to respond to every demand upon their liberality, as their ideas have always grown to meet the emergency, let us have faith! The eyes of the whole scientific world are upon this patriotic and noble effort. If my instincts lead me right, those eyes may yet be dazzled.

REMARKS OF PROF. A. D. BACHE.

PROF. BACHE stated that he had been instructed to make an announcement which though it did not belong immediately to the inauguration of the Dudley Observatory was nevertheless intimately connected with the progress of astronomical science in the United States.

It was known to many whom he addressed that the gentleman who had just closed the lucid and terse account of the organization, and arrangements of the Dudley Observatory, had not many years ago returned from Europe where he had been to study under Gauss, and Schumacher, and Euche, those methods of analysis and of observation which they had done so much to perfect, full of the desire to rival the institutions of the old world by creations in the new. He found observatories established here, and supplied with instruments, and in part with observers, and with the means of publishing from time to time their observations. But no vehicle for the current higher astronomical science of the day, no journal upon the plan of that established by the lamented Schumacher, existed in the country. The importance of such a means of disseminating the results of astronomical research could not be overrated, but its establishment must necessarily be up hill work. Its circulation must be limited to the number of those engaged in practical astronomy, as it could not be popularizing the science appeal to amateurs or to general readers. Such a journal would therefore, unless supported by public funds, be a source of primary loss to its editor or publisher. Such astronomical science Dr. Gould desired to make, and though enjoying none of the emoluments of official position, determined after counsel with a few friends in the Ameri-

can Association for the advancement of Science, and an expression of opinion by the section of Physics, Mathematics and Astronomy to undertake. Thus was established the *Astronomical Journal*, published at Cambridge. The high scientific ability of the editor and the judicious and careful character of his supervision won for the journal the applause of the highest authorities of the United States and in Europe and the good will of numerous contributors. The patronage of the journal was even smaller than could reasonably have been anticipated, no observatory or institution as such contributing more than merely subscriptions to a limited number of copies of the journal to its support. It is due to the friends of Dr. Gould to say that they did contribute as far as he would permit them to alleviate the pecuniary burthen thus thrown upon him, but the independence of the editor always rebelled against offers of aid, and he preferred from his own moderate means to make the sacrifice required to sustain the publication. His labor should not have been rendered gratuitously, but even this contribution did not suffice; he was called upon to labor in other fields and to devote what was thus acquired to the progress of astronomy in his country. An example of devotion to science which well merits that it should be dragged publicly from its concealment and brought to light before those assembled this day.

The sacrifice is now to cease, a fact which will surprise no one more than the Editor himself. The spirit which has done so much in this city for astronomical science has prompted twelve gentlemen of Albany to contribute the sum necessary to support the *Astronomical Journal* for six years; and that journal will be hereafter published in connection with the Dudley Observatory of Albany.

Hon. Edward Everett followed with an Address which occupied nearly two hours in the delivery, and which is so admirably an exposition of the uses of Astronomy, that we transfer it almost entire to our pages.

The subscription to the Dudley Observatory stands at present, (October 1,) as follows:

Mrs. Dudley,	\$76,500	E. Wickes,	250
T. W. Olcott, (for general fund,) 10,000		R. H. Pruyn,	250
T. W. Olcott, (for building,)	500	Joel Rathbone,	250
Wm. H. DeWitt,	1,500	J. B. Plumb,	250
Ezra P. Prentice,	1,000	J. T. Norton,	250
E. Corning, (clock,)	1,000	R. H. King,	250
J. F. Rathbone,	500	Perry, Treadwell & Co., (furnace,) 300	
John Taylor,	500	Jas. Stevenson,	100
Robt. Boyd,	500	H. Q. Hawley,	100
M. T. Reynolds,	500	Chas. L. Austin,	100
R. Dunlap,	500	Rich'd H. Pease,	100
R. Forsyth,	500	Lansing Pruyn,	100
F. & R. Townsend,	500	John J. Hill,	50
W. V. Many,	500	H. & H. Yates,	50
H. Q. Hawley, (for gas works,)	500	A. Osborn,	50
S. H. Ransom,	350	L. S. Parsons,	50
I. W. Vosburgh,	350	John F. Rathbone,	5,000
J. V. L. Pruyn,	250	William H. De Witt,	1,500
J. B. James,	250	Russel Forsyth,	1000
A. Marvin,	250		

VII. THE USES OF ASTRONOMY.

A DISCOURSE DELIVERED AT ALBANY ON THE 28TH OF AUGUST, 1856, ON OCCASION OF THE INAUGURATION OF THE DUDLEY OBSERVATORY: BY EDWARD EVERETT.

[The introduction relative to the History of Albany is omitted.—ED.]

DURING the colonial period, and in the first generation after the revolution, no department of science was, for obvious causes, very extensively cultivated in America,—astronomy perhaps as much as the kindred branches. The improvement in the Quadrant, commonly known as HADLEY'S, had already been made at Philadelphia, by GODFREY, in the early part of the last century, and the beautiful invention of the collimating telescope was made at a later period by RITTENHOUSE, an astronomer of distinguished repute. The transits of Venus of 1761 and 1769 were observed, and orreries were constructed in different parts of the country, and some respectable scientific essays are contained, and valuable observations are recorded in the early volumes of the transactions of the Philosophical Society, at Philadelphia, and the American Academy of Arts and Sciences, at Boston and Cambridge. But, in the absence of a numerous class of men of science to encourage and aid each other, without observatories, and without valuable instruments, little of importance could be expected in the higher walks of astronomical life.

AMERICAN OBSERVATIONS.

The greater the credit due for the achievement of an enterprise commenced in the early part of the present century, and which would reflect honor on the science of any country and any age,—I mean the translation and commentary on Laplace's *Mecanique Celeste*, by Bowditch; a work of whose merit I am myself wholly unable to form an opinion, but which I suppose places the learned translator and commentator on a level with the ablest astronomers and geometers of the day. This work may be considered as opening a new era in the history of American science. The country was still almost wholly deficient in instrumental power; but, the want was generally felt by men of science, and the public mind in various parts of the country began to be turned towards the means of supplying it. In 1825, President John Quincy Adams, brought the subject of a National Observatory before Congress. Political considerations prevented its being favorably entertained at that time; and, it was not till 1842, and as an incident of the exploring expedition, that an appropriation was made for a *depot* for the charts and instruments of the Navy. On this modest basis has been reared the National Observatory, at Washington; an institution which has already taken

and fully sustains an honorable position among the scientific establishments of the age.

Besides the institution at Washington, fifteen or twenty observatories have, within the last few years, been established in different parts of the country; some of them on a modest scale, for the gratification of the scientific taste and zeal of individuals, others on a broad foundation of expense and usefulness. In these establishments, public and private, the means are provided for the highest order of astronomical observation, research, and instruction. There is already in the country an amount of instrumental power, (to which addition is constantly making,) and of mathematical skill, on the part of our men of science, adequate to a manly competition with their European contemporaries. The fruits are already before the world in the triangulation of several of the States, in the great work of the coast survey, in the numerous scientific surveys of the interior of the Continent, in the astronomical department of the exploring expedition, in the scientific expedition to Chili, in the brilliant hydrographical labors of the observatory at Washington, in the published observations of Washington and Cambridge, in the journal conducted by the Nestor of American Science, now in its eighth lustrum; in the *Sidereal Messenger*, the *Astronomical Journal*, and the *National Ephemeris*; in the great chronometrical expeditions to determine the longitude of Cambridge better ascertained than that of Paris was, till within the last year; in the prompt rectification of the errors in the predicted elements of Neptune, in its identification with Lalande's missing star, and in the calculation of its ephemeris; in the discovery of the satellite of Neptune, of the eighth satellite of Saturn, and of the innermost of its rings; in the establishment both by observation and theory of the non-solid character of Saturn's rings; in the separation and measurement of many double and triple stars, amenable only to superior instrumental power, in the immense labor already performed in preparing Star Catalogues, and in numerous accurate observations of standard stars; in the diligent and successful observation of the meteoric showers; in an extensive series of magnetic observations; in the discovery of an asteroid and ten or twelve telescopic comets; in the resolution of nebulae, which had defied everything in Europe but Lord Ross's great Reflector; in the application of electricity to the measurement of differences in longitude; in the ascertainment of the velocity of the electro-magnetic fluid, and its truly wonderful uses in recording astronomical observations. These are but a portion of the achievements of American astronomical science within fifteen or twenty years, and fully justify the most sanguine anticipations of its further progress.

How far, our astronomers may be able to pursue their researches will depend upon the resources of our public institutions, and the liberality of wealthy individuals in furnishing the requisite means. With the exception of the observatories at Washington and West Point, little can be done, or expected to be done by the government of the Union or the States; but, in this, as in every other department of liberal art and sci-

ence, the great dependence, and may I not add the safe dependence, as it ever has been, must continue to be upon the bounty of enlightened, liberal, and public-spirited individuals.

THE DUDLEY OBSERVATORY.

It is by a signal exercise of this bounty, my friends, that we are called together to-day. The munificence of several citizens of this ancient city, among whom the first place is due to the generous lady, whose name has, with great propriety, been given to the institution, has furnished the means for the foundation of the Dudley Observatory, at Albany. On a commanding elevation, on the northern edge of the city, liberally given for that purpose by the head of a family, in which the patronage of science is hereditary, a building of ample dimensions has been erected, upon a plan which combines all the requisites of solidity, convenience, and taste. A large portion of the expense of the structure has been defrayed by Mrs. Blandina Dudley, to whose generosity, and that of several other public-spirited individuals, the institution is also indebted for the provision which has been made for an adequate supply of first-class instruments, to be executed by the most eminent makers in Europe and America; and which, it is confidently expected, will yield to none of their class in any observatory in the world.

With a liberal supply of instrumental power; established in a community to whose intelligence and generosity its support may be safely confided, and whose educational institutions are rapidly realizing the conception of a university; countenanced by the gentleman who conducts the United States coast survey with such scientific skill and administrative energy; committed to the immediate supervision of an astronomer to whose distinguished talent had been added the advantage of a thorough scientific education in the most renowned universities of Europe, and who, as the editor of the *American Astronomical Journal*, has shown himself to be fully qualified for the high trust; under these favorable circumstances, the Dudley Observatory, at Albany, now takes its place among the scientific foundations of the country and the world.

WONDERS OF ASTRONOMY.

It is no affected modesty which leads me to express the regret that this interesting occasion could not have taken place under somewhat different auspices. I feel that the duty of addressing this great and enlightened assembly, comprising so much of the intelligence of the community and of the science of the country, ought to have been elsewhere assigned; that it should have devolved upon some one of the eminent persons, many of whom I see around me, to whom you have been listening the past week, who, as observers and geometers, could have treated the subject with a master's power; astronomers, whose telescopes have penetrated the depths of the heavens, or mathematician, whose analysis unthreads the maze of their wondrous mechanism. If, instead of commanding, as you easily could have done, qualifications of this kind, your choice has rather fallen on one, making no pretensions to the honorable name of a man of science, but whose delight it has al-

ways been to turn aside from the dusty paths of active life, for an interval of recreation in the green fields of sacred nature in all her kingdoms,—it is, I presume, because you have desired on an occasion of this kind, necessarily of a popular character, that those views of the subject should be presented which address themselves to the general intelligence of the community, and not to its select scientific circles. There is, perhaps, no branch of science, which, to the same extent as astronomy, exhibits phenomena which, while they task the highest powers of philosophical research, are also well adapted to arrest the attention of minds barely tinctured with scientific culture, and even to teach the sensibilities of the wholly uninstructed observer. The profound investigations of the chemist into the ultimate constitution of material nature, the minute researches of the physiologist into the secrets of animal life, the transcendental logic of the geometer clothed in a notation, the very sight of which terrifies the uninitiated, are lost on the common understanding. But the unspeakable glories of the rising and the setting sun; the serene majesty of the moon, as she walks in full-orbed brightness through the heavens; the soft witchery of the morning and the evening star; the imperial splendors of the firmament on a bright, unclouded night; the comet, whose streaming banner floats over half the sky, these are objects which charm and astonish alike the philosopher and the peasant;—the mathematician who weighs the masses and defines the orbits of the heavenly bodies, and the untutored observer who sees nothing beyond the images painted upon the eye.

WHAT IS AN ASTRONOMICAL OBSERVATORY?

An astronomical observatory, in the general acceptation of the word, is a building erected for the reception and appropriate use of astronomical instruments, and the accommodation of the men of science employed in making and reducing observations of the heavenly bodies. These instruments are mainly of three classes, to which I believe all others of a strictly astronomical character may be referred.

1. The instruments by which the heavens are inspected, with a view to discover the existence of those celestial bodies which are not visible to the naked eye, (beyond all comparison more numerous than those which are,) and the magnitude, shapes, and other sensible qualities, both of those which are and those which are not thus visible to the unaided sight. The instruments of this class are designated by the general name of Telescope, and are of two kinds,—the refracting telescope, which derives its magnifying power from a system of convex lenses, and the reflecting telescope, which receives the image of the heavenly body upon a concave mirror.

2. The second class of instruments consists of those which are designed principally to measure the angular distances of the heavenly bodies from each other, and their time of passing the meridian. The transit instrument, the meridian circle, the mural circle, the heliometer and the sextant belong to this class. The brilliant discoveries of astron-

omy are for the most part made with the first class of instruments;—its practical results wrought out by the second.

3. The third class contains the clock, with its subsidiary apparatus for measuring the time and making its subdivisions, with the greatest possible accuracy; indispensable auxiliary of all the instruments, by which the positions and motions of the heavenly bodies are observed, and measured, and recorded.

THE TELESCOPE.

The telescope may be likened to a wondrous cyclopean eye, endued with superhuman power, by which the astronomer extends the reach of his vision to the further heavens, and surveys galaxies and universes, compared with which the solar system is but an atom floating in the air. The transit may be compared to the measuring rod which he lays from planet to planet, and from star to star, to ascertain and mark off the heavenly spaces, and transfer them to his note-book—the clock is that marvelous apparatus by which he equalizes and divides into nicely measured parts a portion of that unconceived infinity of duration, without beginning and without end, in which all existence floats as on a shoreless and bottomless sea.

In the contrivance and the execution of these instruments, the utmost stretch of inventive skill and mechanical ingenuity has been put forth. To such perfection have they been carried, that a single second of magnitude or space is rendered a distinctly visible and appreciable quantity. "They are of a circle," says Sir J. Herschell, "subtended by one second, is less than the 200,000th part of the radius, so that on a circle of six feet in diameter, it would occupy no greater linear extent than 1-5700 part of an inch, a quantity requiring a powerful microscope to be discerned at all."* The largest body in our system, the sun, whose real diameter is 882,000 miles subtends at a distance of 95,000,000 miles, but an angle of little more than 32'; while so admirably are the best instruments constructed, that both in Europe and America is satellite of Neptune, an object of comparatively inconsiderable diameter, has been discovered at a distance of 2,850 millions of miles.

UTILITY OF ASTRONOMICAL OBSERVATIONS.

The object of an Observatory, erected and supplied with instruments of this admirable construction and at proportionate expense, is, as I have already intimated, to provide for an accurate and systematic survey of the heavenly bodies, with a view to a more correct and extensive acquaintance with those already known, and as instrumental power and skill in using it, increase to the discovery of bodies hitherto invisible, and in both classes to the determination of their distances, their relations to each other, and the laws which govern their movements.

Why should we wish to obtain this knowledge? What inducement is there to expend large sums of money in the erection of Observatories, and in furnishing them with costly instruments, and in the support of

* Herschell's *Outlines of Astronomy*, § 131.

the men of science employed in making, discussing and recording, for successive generations, these minute observations of the heavenly bodies?

In an exclusively scientific treatment of this subject, an inquiry into its utilitarian relations would be superfluous—even wearisome. But on an occasion like the present you will not, perhaps, think it out of place, if I briefly answer the question; what is the use of an observatory, and what benefit may be expected from the operations of such an establishment in a community like ours?

I. In the first place, then, we derive from the observations of the heavenly bodies, which are made at an observatory, our only adequate measures of time and our only means of comparing the time of one place with the time of another. Our artificial time-keepers—clocks, watches, and chronometers, however ingeniously contrived and admirably fabricated, are but a transcript, so to say, of the celestial motions, and would be of no value without the means of regulating them by observation. It is impossible from them under any circumstances to escape the imperfection of all machinery, the work of human hands;—and the moment we remove with our time-keeper east or west, it fails us. It will keep home time alone, like the fond traveler who leaves his heart behind him. The artificial instrument is of incalculable utility, but must itself be regulated by the eternal clock work of the skies.

RELATIONS BETWEEN NATURAL PHENOMENA AND DAILY LIFE.

This single consideration, is sufficient to show how completely the daily business of life is affected and controlled by the heavenly bodies. It is they and not our main-springs, our expansion balances and our compensation pendulums, which give us our time. To reverse the line of Pope:

*'Tis with our watches as our judgments;—none
Go just alike, but each believes his own;—*

But for all the kindreds and tribes and tongues of men,—each upon their own meridian,—from the Artic pole to the equator, from the equator to the Antarctic pole, the eternal sun strikes twelve at noon, and the glorious constellations, far up in the everlasting belfries of the skies, chime twelve at midnight;—twelve for the pale student over his flickering lamp, twelve amid the flaming glories of Orion's belt, if he crosses the meridian at that fated hour;—twelve by the weary couch of languishing humanity, twelve in the star-paved courts of the Empyrean; twelve for the heaving tides of the ocean; twelve for the weary arm of labor; twelve for the toiling brain; twelve for the watching, waking, broken heart; twelve for the meteor which blazes for a moment and expires; twelve for the comet whose period is measured by centuries; twelve for every substantial, for every imaginary thing, which exists in the sense, the intellect, or the fancy, and which the speech or thought of man, at the given meridian, refers to the lapse of time.

Not only do we resort to the observation of the heavenly bodies for the means of regulating and rectifying our clocks, but the great divisions

of day and month and year are derived from the same source. By the constitution of our nature the elements of our existence are closely connected with celestial times. Partly by his physical organization, partly by the experience of the race from the dawn of creation, man as he is, and the times and seasons of the heavenly bodies are part and parcel of one system. The first great division of time, the *day-night* (*nycthemerum*), for which we have no precise synonym in our language, with its primal alternation of waking and sleeping, of labor and rest, is a vital condition of the existence of such a creature as man. The revolution of the year, with its various incidents of summer and winter, and seed-time and harvest, is not less involved in our social, material and moral progress. It is true that at the poles and on the equator, the effects of these revolutions are variously modified or wholly disappear, but as the necessary consequence, human life is extinguished at the poles, and on the equator attains only a languid or feverish development. Those latitudes only in which the great motions and cardinal positions of the earth exert a mean influence, exhibit man in the harmonious expansion of his powers. The lunar period, which lies at the foundation of the *month*, is less vitally connected with human existence and development; but is proved by the experience of every age and race to be eminently conducive to the progress of civilization and culture.

But indispensable as are these heavenly measures of time to our life and progress, and obvious as are the phenomena on which they rest, yet owing to the circumstances that, in the economy of nature, the day, the month, and the year are not exactly commensurable, some of the most difficult questions in practical astronomy are those by which an accurate division of time, applicable to the various uses of life, is derived from the observation of the heavenly bodies. I have no doubt that, to the Supreme Intelligence which created and rules the universe, there is a harmony hidden to us in the numerical relation to each other of days, months and years; but in our ignorance of that harmony, their practical adjustment to each other is a work of difficulty. The great embarrassment which attend the reformation of the calendar, after the error of the Julian period, had, in the lapse of centuries, reached ten (or rather twelve) days, sufficiently illustrates this remark. It is most true that scientific difficulties did not form the chief obstacle. Having been proposed under the auspices of the Roman Pontiff, the protestant world, for a century and more, rejected the new style. It was in various places the subject of controversy, collision and bloodshed.* It was not adopted in England till nearly two centuries after its introduction at Rome; and in the country of Struve and the Pulkova equatorial, they persist at the present day in adding eleven minutes and twelve seconds to the length of the tropical year.

GEOGRAPHICAL SCIENCE.

II. The second great practical use of an Astronomical Observatory is

* Stern's "Himmelskunde," p. 72.

connected with the science of Geography. The first page of the history of our continent declares this truth. Profound meditation on the sphericity of the earth was one of the main reasons which led Columbus to undertake his momentous voyage, and his thorough acquaintance with the astronomical science of that day was, in his own judgment, what enabled him to overcome the almost innumerable obstacles which attended its prosecution.* In return, I find that Copernicus in the very commencement of his immortal work,† appeals to the discovery of America as completing the demonstration of the sphericity of the earth. Much of our knowledge of the figure, size, density, and position of the earth as a member of the solar system is derived from this science, and it furnishes us the means of performing the most important operations of practical geography. Latitude and longitude which lie at the basis of all descriptive geography are determined by observation. No map deserves the name, on which the position of important points has not been astronomically determined. Some even of our most important political and administrative arrangements depend upon the cooperation of this science. Among these I may mention the land system of the United States, and the determination of the boundaries of the country. I believe that till it was done by the Federal Government, a uniform system of mathematical survey had never in any country been applied to an extensive territory. Large grants and sales of public land took place before the Revolution and in the interval between the peace and the adoption of the Constitution; but the limits of these grants and sales were ascertained by sensible objects, by trees, streams, rocks, hills, and by reference to adjacent portions of territory, previously surveyed. The uncertainty of boundaries thus defined, was a never-failing source of litigation. Large tracts of land in the western country granted by Virginia, under this old system of special and local survey, were covered with conflicting claims, and the controversies to which they gave rise formed no small part of the business of the Federal Court after its organization. But the adoption of the present land-system brought order out of chaos. The entire public domain is now scientifically surveyed before it is offered for sale; it is laid off into ranges, townships, sections and smaller divisions with unerring accuracy, resting on the foundation of base and meridian lines;—and I have been informed that under this system, scarce a case of contested location and boundary has ever presented itself in court. The general land office contains maps and plans, in which every quarter-section of the public land is laid down with mathematical precision. The superficies of half a continent is thus transferred in miniature to the bureaus of Washington;—while the local Land Offices contain transcripts of these plans, copies of which are furnished to the individual purchaser. When we consider the tide of population annually flowing

* Humboldt, *Histoire de la géographie*, &c., Tom. I. p. 77

† Copernicus de Revolutionibus orbium cælestium, Fol. 2.

into the public domain, and the immense importance of its efficient and economical administration, the utility of this application of Astronomy will be duly estimated.

I will here venture to repeat an anecdote which I heard lately from a son of the late Hon. Timothy Pickering. Mr. Octavius Pickering, on behalf of his father, had applied to Mr. David Putnam of Marietta, to act as his legal adviser, with respect to certain land claims in the Virginia military district, in the State of Ohio. Mr. Putnam declined the agency. He had had much to do with business of that kind and found it beset with endless litigation. "I have never," he added, "succeeded but in a single case, and that was a location and survey made by General Washington before the Revolution, and I am not acquainted with any surveys, except those made by him, but what have been litigated."

At this moment, a most important survey of the coast of the United States is in progress; an operation of the utmost consequence, in reference to the commerce, navigation, and hydrography of the country. The entire work, I need scarce say, is one of practical astronomy. The scientific establishment which we this day inaugurate is looked to for important coöperation in this great undertaking, and will no doubt contribute efficiently to its prosecution.

Astronomical observation furnishes by far the best means of defining the boundaries of States, especially when the lines are of great length and run through unsettled countries. Natural indications, like rivers and mountains, however indistinct in appearance, are in practice subject to unavoidable error. By the treaty of 1783, a boundary was established between the United States and Great Britain, depending chiefly on the course of rivers and highlands dividing the waters which flow into the Atlantic Ocean, from those which flow into the St. Lawrence. It took twenty years to find out which river was the true St. Croix, that being the starting point. England then having made the extraordinary discovery that the Bay of Fundy is not a part of the Atlantic Ocean, forty years more were passed in the unsuccessful attempt to re-create the Highlands, which this strange theory had annihilated; and just as the two countries were on the verge of a war, the controversy was settled by compromise. Had the boundary been accurately described by lines of latitude and longitude, no dispute could have arisen. No dispute arose as to the boundary between the United States and Spain, and her successor, Mexico, where it runs through untrodden deserts and over pathless mountains along the 42d degree of latitude. The identity of rivers may be disputed as in the case of the St. Croix; the course of mountain chains is too broad for a dividing line; the division of streams, as experience has shown, is uncertain, but a degree of latitude is written on the Heavenly sphere, and nothing but an observation is required to read the record.

QUESTIONS OF BOUNDARY.

But scientific elements, like sharp instruments, must be handled with scientific accuracy. A part of our boundary between the British Pro-

vinces ran upon the forty-fifth degree of latitude ; and about forty years ago, an expensive fortress was commenced by the Government of the United States at Rouse's Point on Lake Champlain, on a spot intended to be just within our limits. When a line came to be more carefully surveyed, the fortress turned out to be on the wrong side of the line; we had been building an expensive fortification for our neighbor. But in the general compromises of the Treaty of Washington by the Webster and Ashburton Treaty in 1842, the fortification was left within our limits.*

Errors still more serious had nearly resulted a few years since in a war with Mexico. By the treaty of Guadalupe Hidalgo, in 1848, the boundary line between the United States and that country was in part described by reference to the town of El Paso, as laid down on a specified map of the United States, of which a copy was appended to the treaty. This boundary was to be surveyed and run by a joint commission of men of science. It soon appeared that errors of two or three degrees existed in the projection of the map. Its lines of latitude and longitude did not conform to the topography of the region ; so that it became impossible to execute the text of the treaty. The famous Mesilla Valley was a part of the debatable ground, and the sum of \$10,000,000 paid to the Mexican government, for that and for an additional strip of territory on the southwest, was the smart-money which expiated the inaccuracy of the map ; the necessary result perhaps of the want of good materials for its construction.

It became my official duty, in London, a few years ago, to apply to British government for an authentic statement of their claim to jurisdiction over New Zealand. The official *Gazette* for the 2d of October, 1840, was sent me from the Foreign office, as affording the desired information. This number of the *Gazette* contained the proclamations issued by the Lieut. Governor of New Zealand "in pursuance of the instructions he received from the Marquess of Normandy, one of Her Majesty's principal Secretaries of State," asserting the jurisdiction of his Government over the Islands of New Zealand, and declaring them to extend "from 34° 30' north, to 47° 10' south latitude." It is scarcely necessary to say, that south latitude was intended in both instances. This error of 69° of latitude, which would have extended the claim of British jurisdiction over the whole breadth of the Pacific, had apparently escaped the notice of that government.

It would be easy to multiply illustrations in proof of the great practical importance of accurate scientific designations drawn from astronomical observations, in various relations connected with boundaries, surveys, and other geographical purposes ; but I must hasten to

COMMERCE AND NAVIGATION.

III. A third important department, in which the services rendered by astronomy are equally conspicuous. I refer to commerce and naviga-

* Webster's Works. Vol. I., 110, 115.

tion. It is mainly owing to the results of astronomical observation that modern commerce has attained such a vast expansion, compared with that of the ancient world. I have already reminded you that accurate ideas in this respect contributed materially to the conception in the mind of Columbus of his immortal enterprise, and to the practical success with which it was conducted. It was mainly his skill in the use of astronomical instruments, imperfect as they were, which enabled him, in spite of the bewildering variation of the compass, to find his way across the ocean.

With the progress of the true system of the universe toward general adoption, the problem of finding the longitude at sea presented itself. This was the avowed object of the foundation of the observatory at Greenwich,* and no one subject has received more of the attention of astronomers than those investigations of the lunar theory, on which the requisite tables of the navigator are founded. The pathways of the ocean are marked out in the sky above. The eternal lights of the heavens are the only Pharos whose beams never fail; which no tempest can shake from its foundation. Within my recollection, it was deemed a necessary qualification for the master and the mate of a merchant-ship, and even for a prime hand, to be able to "work a lunar," as it was called. The improvements in the chronometer have in practice, to a great extent, superseded this laborious operation, but observation remains, and unquestionably will forever remain, the only dependence for ascertaining the ship's time, and deducting the longitude from the comparison of that time with the chronometer.

It may, perhaps, be thought that astronomical science is brought already to such a state of perfection that nothing more is to be desired, or at least that nothing more is attainable, in reference to such practical applications as I have described. This, however, is an idea which generous minds will reject, in this as in every other department of human knowledge. In astronomy, as in everything else, the discoveries already made, theoretical or practical, instead of exhausting the science, or putting a limit to its advancement, do but furnish the means and instruments of further progress. I have no doubt we live on the verge of discoveries and inventions, in every department as brilliant as any that have ever been made; that there are new truths, new facts, ready to start into recognition on every side; and it seems to me there never was an age, since the dawn of time, when men ought to be less disposed to rest satisfied with the progress already made, than the age in which we live; for there never was an age more distinguished for ingenious research, for novel result, and bold generalization.

That no further improvement is desirable in the means and methods of ascertaining the ship's place at sea, no one I think will from experience be disposed to assert. The last time I crossed the Atlantic, I walked the quarter-deck with the officer in charge of the noble vessel, on one occasion, when we were driving along before a leading breeze and under a head of steam, beneath a starless sky at midnight, at the rate certainly

*Grant's History of Physical Astronomy, p. 460.

of ten or eleven miles an hour. There is something sublime, but approaching the terrible, in such a scene;—the rayless gloom, the midnight chill, the awful swell of the deep, the dismal moan of the wind through the rigging, the all but volcanic fires within the hold of the ship; I scarce know an occasion in ordinary life in which a reflecting mind feels more keenly its hopeless dependence on irrational forces beyond its own control. I asked my companion how nearly he could determine his ships' place at sea under favorable circumstances. Theoretically, he answered. I think, within a mile;—practically and usually within three or four. My next question was, how near do you think we may be to Cape Race? that dangerous headland which pushes its iron-bound unlighted bastions from the shore of Newfoundland far into the Atlantic; first land-fall to the homeward-bound American vessel. We must, said he, by our last observations and reckoning, be within three or four miles of Cape Race. A comparison of these two remarks, under the circumstances in which we were placed at the moment, brought my mind to the conclusion, that it is greatly to be wished that the means should be discovered of finding the ship's place more accurately, or that navigators would give Cape Race a little wider berth. Still I do not remember that one of the steam packets between England and America was ever lost on that formidable point.

It appears to me by no means unlikely that, with the improvement of instrumental power, and of the means of ascertaining the ship's time with exactness, as great an advance beyond the present state of art and science in finding a ship's place at sea may take place, as was effected by the invention of the reflecting quadrant, the calculation of lunar tables, and the improved construction of chronometers.

BABBAGE'S DIFFERENCE MACHINE.

In the wonderful versatility of the human mind, the improvement, when made, will very probably be made by paths where it is least expected. The great inducement to Mr. Babbage to attempt the construction of an engine, by which astronomical tables could be calculated and even printed by mechanical means and with entire accuracy, was the errors in the requisite tables. Nineteen such errors, in point of fact, were discovered in an edition of Taylor's logarithms printed in 1796; some of which might have led to the most dangerous results in calculating a ship's place. These nineteen errors, (of which one only was an error of the press,) were pointed out in the *Nautical Almanac* for 1832. In one of these *errata* the seat of the error was stated to be in cosine of $14^{\circ} 18' 3''$. Subsequent examination showed that there was an error of one second in this correction, and according in the *Nautical Almanac* of the next year, a new correction was necessary. But in making the new correction of one second, a new error was committed of ten degrees. Instead of cosine $14^{\circ} 18' 2''$ the correction was printed cosine $4^{\circ} 18' 2''$, making it still necessary, in some future edition of the *Nautical Almanac*, to insert an *erratum* in an *erratum* of the *errata* in Taylor's logarithms.*

* *Edinburgh Review*, Vol. LIX., 282.

In the hope of obviating the possibility of such errors, Mr. Babbage projected his calculating, or, as he prefers to call it, his difference machine. Although this extraordinary undertaking has been arrested, in consequence of the enormous expense attending its execution, enough has been achieved to show the mechanical possibility of constructing an engine of this kind, and even one of far higher powers, of which Mr. Babbage has matured the conception, devised the notation, and executed the drawings—themselves an imperishable monument of the genius of the author.

I happened on one occasion to be in company with this highly distinguished man of science, whose social qualities are as pleasing as his constructive talent is marvellous, when another eminent *savant*, Count Strzelecki, just returned from his Oriental and Australian tour, observed that he found among the Chinese a great desire to know something more of Mr. Babbage's calculating machine, and especially whether, like their own *swanpan*, it could be made to go into the pocket. Mr. Babbage good-humoredly observed that, thus far, he had been very much out of pocket with it.

INCREASED COMMAND OF INSTRUMENTAL POWER.

Whatever advances may be made in astronomical science, theoretical or applied, I am strongly inclined to think that they will be made in connection with an increased command of instrumental power. The natural order in which the human mind proceeds in the acquisition of astronomical knowledge is minute and accurate observation of the phenomena of the heavens, the skillful discussion and analysis of these observations, and sound philosophy in generalizing the results.

In pursuing this course, however, a difficulty presented itself, which for ages proved insuperable, and which to the same extent has existed in no other science, viz: that all the leading phenomena are in their appearance delusive. It is indeed true that in all sciences, superficial observation can only lead, except by chance, to superficial knowledge; but I know of no branch in which, to the same degree as in astronomy, the great leading phenomena are the reverse of true, while they yet appeal so strongly to the senses, that men who could foretell eclipses, and who discovered the precession of the equinoxes, still believed that the earth was at rest in the centre of the universe, and that all the hosts of heaven performed a daily revolution about it as a centre.

It usually happens in scientific progress, that when a great fact is at length discovered, it approves itself at once to all competent judges. It furnishes a solution to so many problems and harmonizes with so many other facts, that all the other *data*, as it were, crystallize at once about it. In modern times, we have often witnessed such an impatience, so to say, of great truths, to be discovered, that it has frequently happened that they have been found out simultaneously by more than one individual; and a disputed question of priority is an event of very common occurrence. Not so with the true theory of the heavens. So

complete is the deception practiced on the senses, that it failed more than once to yield to the suggestion of the truth ; and it was only when the visual organs were armed with an almost preternatural instrumental power, that the great fact found admission to the human mind.

THE COPERNICAN SYSTEM.

It is supposed that in the very dawn of science, Pythagoras or his disciples explained the apparent motion of the heavenly bodies about the earth, by the diurnal révolution of the earth on its axis. But this theory, though bearing so deeply impressed upon it the great seal of truth, *simplicity*, was in such glaring contrast with the evidence of the senses, that it failed of acceptance in antiquity or the middle ages. It found no favor with minds like those of Aristotle, Archimedes, Hipparchus, Ptolemy, or any of the acute and learned Arabian or mediæval astronomers. All their ingenuity and all their mathematical skill were exhausted in the development of a wonderfully complicated and ingenious, but erroneous theory. The great master truth, rejected for its simplicity, lay, disregarded, at their feet.

At the second dawn of science, the great fact again beamed into the mind of Copernicus. Now, at least, in that glorious age which witnessed the invention of printing, the great mechanical engine of intellectual progress, and the discovery of America, we may expect that this long hidden revelation, a second time proclaimed, will command the assent of mankind. But the sensible phenomena were still too strong for the theory ; the glorious delusion of the rising and the setting sun could not be overcome. Tycho de Brahe furnished his observatory with instruments superior in number and quality to all that had been collected before ; but the great instrument of discovery, which, by augmenting the optic power of the eye, enables it to penetrate beyond the apparent phenomena and to discern the true constitution of the heavenly bodies, was wanting at Uranienburg. The observations of Tycho as discussed by Keppler, conducted that most fervid, powerful and sagacious mind to the discovery of some of the most important laws of the celestial motions ; but it was not till Galileo, at Florence, had pointed his telescope to the sky, that the Copernican system could be said to be firmly established in the scientific world.

THE HOME OF GALILEO.

On this great name, my friends, assembled as we are to dedicate a temple to instrumental Astronomy, we may well pause for a moment.

There is much, in every way, in the city of Florence to excite the curiosity, to kindle the imagination, and to gratify the taste. Sheltered on the north by the vine-clad hills of Fiesolè, whose Cyclopean walls carry back the antiquary to ages before the Roman, before the Etruscan power, the flowery city (Firenza) covers the sunny banks of the Arno with its stately palaces. Dark and frowning piles of mediæval structure ; a majestic dome, the prototype of St. Peter's, basilicas which enshrine the ashes of some of the mightiest of the dead, the stone where Dante stood to gaze on the *campanile*, the house of Michael

Angelo, still occupied by a descendant of his lineage and name; his hammer, his chisel, his dividers, his manuscript poems, all as if he had left them but yesterday;—airy bridges, which seem not so much to rest on the earth as to hover over the waters they span; the loveliest creations of ancient art, rescued from the grave of ages again to “enchant the world;” the breathing marbles of Michael Angelo, the glowing canvas of Raphael and Titian, museums filled with medals and coins of every age from Cyrus the younger; and gems, and amulets, and vases, from the sepulchres of Egyptian Pharaohs coeval with Joseph, and Etruscan Lucumons that swayed Italy before the Romans;—libraries stored with the choicest texts of ancient literature; gardens of rose and orange and pomegranate and myrtle; the very air you breathe languid with music and perfume; such is Florence. But among all its fascinations addressed to the sense, the memory and the heart, there was none to which I more frequently gave a meditative hour during a years’ residence, than to the spot where Galileo Galilei sleeps beneath the marble floor of Santa Croce; no building on which I gazed with greater reverence than I did upon the modest mansion at Arcetri, villa at once and prison, in which that venerable sage, by command of the Inquisition, passed the sad closing years of his life; the beloved daughter on whom he had depended to smooth his passage to the grave laid there before him; the eyes with which he had discovered worlds before unknown, quenched in blindness:

*Ahimè! quegli occhi sì son fatti oscuri,
Che veder più di tutti i tempi antichi,
E luce fur dei secoli futuri.*

That was the house “where,” says Milton, (another of those of whom the world was not worthy.) “I found and visited the famous Galileo, grown old,—a prisoner to the Inquisition, for thinking on astronomy, otherwise than as the Dominican and Franciscan licensers thought.”* Great heavens! what a tribunal, what a culprit, what a crime! Let us thank God, my friends, that we live in the nineteenth century. Of all the wonders of ancient and modern art; statues and paintings, and jewels and manuscripts; the admiration and delight of ages; there was nothing which I beheld with more affectionate awe than that poor rough tube, a few feet in length, the work of his own hands; that very “optic glass” through which the “Tuscan Artist” viewed the moon,

*“At evening from the top of Fesolè,
Or in Valdarno to descry new lands,
Rivers, or mountains, in her spotty globe.”*

that poor little spy-glass (for it is scarcely more) through which the human eye first distinctly beheld the surface of the moon; first discovered the phases of Venus, the satellites of Jupiter, and the seeming handles of Saturn; first penetrated the dusky depths of the heavens; first pierced the clouds of visual error, which, from the creation of the world involved the system of the Universe.

* Milton's Prose works, Vol. I., p. 313.

There are occasions in life in which a great mind lives years of rapt enjoyment in a moment. I can fancy the emotions of Galileo, when, first raising the newly constructed telescope to the heavens, he saw fulfilled the grand prophecy of Copernicus, and beheld the planet Venus crescent like the moon. It was such another moment as that when the immortal printers of Mentz and Strasburg, received the first copy of the Bible into their hands, the work of their divine Art; like that when Columbus, through the gray dawn of the 12th October, 1492, (Copernicus, at the age of 18, was then a student at Cracow) beheld the shores of San Salvador; like that when the law of gravitation first revealed itself to the intellect of Newton; like that when Franklin saw by the stiffening fibres of the hempen cord of his kite, that he held the lightning in his grasp; like that when Leverrier received back from Berlin the tidings that the predicted planet was found.

Yes, noble Galileo, thou art right, *E pur si muove*. "It does move." Bigots may make thee recant it; but it moves nevertheless. Yes, the earth moves, and the planets move, and the mighty waters move, and the great sweeping tides of air move, and the empires of men move, and the world of thought moves, ever onward and upward to higher facts and bolder theories. The inquisition may seal thy lips, but they can no more stop the progress of the great truth propounded by Copernicus and demonstrated by thee, than they can stop the revolving earth.

Close now, venerable sage, that sightless, tearful eye; it has seen what man never before saw—it has seen enough. Hang up that poor little spy-glass—it has done its work. Not Herschell nor Roese have comparatively done more. Franciscans and Dominicans deride thy discoveries now, but the time will come when from two hundred observatories in Europe and America, the glorious artillery of science shall nightly assault the skies, but they shall gain no conquests in those glittering fields before which thine shall be forgotten. Rest in peace, great Columbus of the Heavens, like him scorned, persecuted, broken-hearted; in other ages, in distant hemispheres, when the votaries of science, with solemn acts of consecration shall dedicate their stately edifices to the cause of knowledge and truth, thy name shall be mentioned with honor!

NEW PERIODS IN ASTRONOMICAL SCIENCE.

It is not my intention, in dwelling with such emphasis upon the invention of the Telescope, to ascribe undue importance, in promoting the advancement of science, to the increase of instrumental power. Too much, indeed, cannot be said of the service rendered by its first application in confirming and bringing into general repute the Copernican system; but for a considerable time, little more was effected by the wondrous instrument, than the gratification of curiosity and taste by the inspection of the planetary phases, and the addition of the rings and satellites of Saturn to the solar family. Newton prematurely despairing of any further improvement in the refracting telescope, applied the

principle of reflection, and the nicer observations now made, no doubt hastened the maturity of his great discovery of the law of gravitation; but that discovery was the work of his transcendent genius and consummate skill.

With Bradley, in 1741, a new period commenced in instrumental astronomy, not so much of discovery as of measurement. The superior accuracy and minuteness with which the motions and distances of the heavenly bodies were now observed, resulted in the accumulation of a mass of new materials, both for tabular comparison and theoretical speculation. These materials formed the enlarged basis of Astronomical Science between Newton and Sir William Herschell. His gigantic reflectors introduced the astronomer to regions of space before unvisited, extended beyond all previous conception the range of the observed phenomena, and with it proportionably enlarged the range of constructive theory. The discovery of a new primary planet and its attendant satellites was but the first step of his progress into the labyrinth of the heavens. Contemporaneously with his observations, the French astronomers, and especially LaPlace, with a geometrical skill scarcely, if at all, inferior to that of its great author, resumed the whole system of Newton, and brought every phenomenon observed since his time within his laws. Difficulties of fact with which he struggled in vain, gave way to more accurate observations, and problems that defied the power of his analysis yielded to the modern improvements of the calculus.

HERSCHELL'S NEBULAR THEORY.

But there is no *ultima Thule* in the progress of science. With the recent augmentations of telescopic power, the details of the Nebular theory proposed by Sir W. Herschell with such courage and ingenuity have been drawn in question. Many—most—of those milky patches in which he beheld what he regarded as cosmical matter, as yet in an unformed state,—the rudimental material of worlds not yet condensed, have been resolved into stars, as bright and distinct as any in the firmament. I well recall the glow of satisfaction, with which on the 22d of September, 1847, being then connected with the University at Cambridge, I received a letter from the venerable director of the Observatory there, beginning with these memorable words: "You will rejoice with me that the great nebula in Orion has yielded to the powers of our incomparable telescope! . . . It should be borne in mind that this nebula and that of Andromeda [which has been also resolved at Cambridge] are the last strongholds of the nebular theory."*

But if some of the adventurous speculations built by Sir William Herschell on the bewildering revelations of his telescope have been since questioned, the vast progress which has been made in sidereal astronomy, (to which, as I understand, the Dudley Observatory will be particularly devoted,) the discovery of the parallax of the fixed stars, the investigation of the interior relations of binary and triple systems of

* Annals of the Observatory of Harvard College, p. cxxi.

stars, the theories for the explanation of the extraordinary, not to say fantastic, shapes discerned in some of the nebulous systems,—whirls and spirals radiating thorough spaces as vast as the orbit of Neptune,* the glimpses at systems beyond that to which our sun belongs,—these are all splendid results, which may fairly be attributed to the school of Herschell, and will forever insure no secondary place to that name in the annals of science.

RELATIONSHIP OF THE LIBERAL ARTS.

In the remarks which I have hitherto made, I have had mainly in view the direct connection of astronomical science with the uses of life and the service of man. But a generous philosophy contemplates the subject in higher relations. It is a remark as old at least as Plato, and is repeated from him more than once by Cicero, that all the liberal arts have a common bond and relationship.† The different sciences contemplate as their immediate object the different departments of animate and inanimate nature; but this great system itself is but one; and its various parts are so interwoven with each other, that the most extraordinary relations and unexpected analogies are constantly presenting themselves; and arts and sciences seemingly the least connected, render to each other the most effective assistance.

The history of electricity, galvanism, and magnetism, furnishes the most striking illustration of this remark. Commencing with the meteorological phenomena of our own atmosphere, and terminating with the observation of the remotest heavens, it may well be adduced on an occasion like the present. Franklin demonstrated the identity of lightning and the electric fluid. This discovery gave a great impulse to electrical research, with little else in view but the means of protection from the thunder-cloud. A purely accidental circumstance led the Physician Galvani, at Bologna, to trace the mysterious element, under conditions entirely novel both of developement and application. In this new form it became, in the hands of Davy, the instrument of the most extraordinary chemical operations; and earths and alkalis, touched by the creative wire, started up into metals that float on water, and kindle in the air. At a later period, the closest affinities are observed between electricity and magnetism, on the one hand; while on the other the relations of polarity are detected between acids and alkalis. Plating and gilding henceforth become electrical processes. In the last applications of the same subtle medium, it has become the messenger of intelligence across the land and beneath the sea; and is now employed by the astronomer to ascertain the difference of longitudes, to transfer the beats of the clock from one station to another, and to record the moment of his observations with automatic accuracy. How large a share has been borne by America in these magnificent discoveries and

* See the remarkable memoir of Professor Alexander, "on the origin of the forms and the present condition of some of the clusters of stars, and several of the Nebulae."—*Gould's Astronomical Journal*, Vol 3, p. 95.

† *Archias I*; *de Oratore III*, 21.

applications, among the most brilliant achievements of modern science will sufficiently appear from the repetition of the names of Franklin, Henry, Morse, Walker, Mitchell, Lock and Bond.

VERSATILITY OF GENIUS.

It has sometimes happened, whether from the harmonious relations to each other of every department of science, or from rare felicity of individual genius, that the most extraordinary intellectual versatility has been manifested by the same person. Although Newton's transcendent talent did not blaze out in childhood, yet as a boy he discovered great aptitude for mechanical contrivance. His water-clock, self-moving vehicle, and mill, were the wonder of the village; the latter propelled by a living mouse. Sir David Brewster represents the accounts as differing, whether the mouse was made to advance "by a string attached to its tail," or by "its unavailing attempts to reach a portion of corn placed above the wheel." It seems more reasonable to conclude that the youthful discoverer of the law of gravitation intended by the combination of these opposite attractions to produce a balanced movement. It is consoling to the average mediocrity of the race to perceive in these sportive essays, that the mind of Newton passed through the stage of boyhood. But emerging from boyhood, what a bound it made as from earth to heaven! Hardly commencing Bachelor of arts, at the age of twenty-four, he untwisted the golden and silver threads of the solar spectrum, simultaneously or soon after conceived the method of fluxions, and arrived at the elemental idea of universal gravity before he had passed to his Master's degree. Master of arts, indeed! That degree, if no other, was well bestowed. Universities are unjustly accused of fixing science in stereotype. That diploma is enough of itself to redeem the honors of academical parchment from centuries of learned dullness and scholastic dogmatism.

But the great object of all knowledge is to enlarge and purify the soul, to fill the mind with noble contemplations, to furnish a refined pleasure, and to lead our feeble reason from the works of nature up to its great Author and Sustainer. Considering this as the ultimate end of science, no branch of it can surely claim precedence of astronomy. No other science furnishes such a palpable embodiment of the abstractions which lie at the foundation of our intellectual system; the great ideas of time, and space, and extension, and magnitude, and number, and motion, and power. How grand the conception of the ages on ages required for several of the secular equations of the solar system; of distances from which the light of a fixed star would not reach us in twenty millions of years, § of magnitudes compared with which the earth is but a foot ball: of starry hosts, suns like our own, numberless as the sands on the shore; of worlds and systems shooting through the infinite spaces, with a velocity compared with which the cannon-ball is a way-worn, heavy-paced traveler!

§ Nichol's *Architecture of the Heavens*, p. 160.

THE SPECTACLE OF THE HEAVENS.

Much, however, as we are indebted to our observatories for elevating our conceptions of the heavenly bodies, they present, even to the unaided sight, scenes of glory which words are too feeble to describe. I had occasion, a few weeks since, to take the early train from Providence to Boston; and for this purpose rose at two o'clock in the morning. Every thing around was wrapped in darkness and hushed in silence, broken only by what seemed at that hour the unearthly clank and rush of the train. It was a mild, serene midsummer's night; the sky was without a cloud, the winds were whist. The moon, then in the last quarter, had just risen, and the stars shone with a spectral lustre but little affected by her presence; Jupiter, two hours high was the herald of the day; the Pleiades, just above the horizon, shed their sweet influence in the east; Lyra sparkled near the zenith; Andromeda veiled her newly discovered glories from the naked eye in the south; the steady pointers, far beneath the pole, looked meekly up from the depths of the north to their Sovereign.

Such was the glorious spectacle as I entered the train. As we proceeded, the timid approach of twilight became more perceptible; the intense blue of the sky began to soften, the smaller stars, like little children, went first to rest; the sister-beams of the Pleiades soon melted together; but the bright constellations of the west and north remained unchanged. Steadily the wondrous transfiguration went on. Hands of angels hidden from mortal eyes shifted the scenery of the heavens; the glories of night dissolved into the glories of the dawn. The blue sky now turned more softly gray; the great watch stars shut up their holy eyes; the east began to kindle. Faint streaks of purple soon blushed along the sky; the whole celestial concave was filled with the inflowing tides of the morning light, which came pouring down from above in one great ocean of radiance; till at length, as we reached the Blue Hills, a flash of purple fire blazed out from above the horizon, and turned the dewy tear-drops of flower and leaf into rubies and diamonds. In a few seconds the everlasting gates of the morning were thrown wide open, and the lord of day, arrayed in glories too severe for the gaze of man, began his course.

I do not wonder at the superstition of the ancient Magians, who in the morning of the world went up to the hill tops of Central Asia, and ignorant of the true God, adored the most glorious work of his hand. But I am filled with amazement, when I am told that in this enlightened age, and in the heart of the Christian world, there are persons who can witness this daily manifestation of the power and wisdom of the Creator, and yet say in their hearts, "There is no God."

UNDISCOVERED BODIES.

Numerous as are the heavenly bodies visible to the naked eye, and glorious as are their manifestations, it is probable that in our own system there are great numbers as yet undiscovered. Just two hundred

years ago this year, Huyghens announced the discovery of one satellite of Saturn, and expressed the opinion that the six planets and six satellites then known, and making up the perfect number of *twelve*, composed the whole of our planetary system. In 1729, an astronomical writer expressed the opinion that there might be other bodies in our system, but that the limit of telescopic power had been reached, and no further discoveries were likely to be made.* The orbit of one comet only had been definitively calculated. Since that time the power of the telescope has been indefinitely increased; two primary planets of the first class, ten satellites, and forty-three small planets revolving between Mars and Jupiter have been discovered, the orbits of six or seven hundred comets, some of brief period, have been ascertained;—and it has been computed that hundreds of thousands of these mysterious bodies wander through our system. There is no reason to think that all the primary planets, which revolve about the sun, have been discovered. An indefinite increase in the number of asteroids may be anticipated; while outside of Neptune between our sun and the nearest fixed star, supposing the attraction of the sun to prevail through half the distance, there is room for ten more primary planets succeeding each other at distances increasing in a geometrical ratio. The first of these will, unquestionably be discovered as soon as the perturbations of Neptune shall have been accurately observed; and with maps of the heavens on which the smallest telescopic stars are laid down, it may be discovered much sooner.

THE VASTNESS OF CREATION.

But it is when we turn our observation and our thoughts from our own system, to the systems which lie beyond it in the heavenly spaces, that we approach a more adequate conception of the vastness of Creation. All analogy teaches us that the sun which gives light to us is but one of those countless stellar fires which deck the firmament, and that every glittering star in that shining host is the centre of a system as vast and as full of subordinate luminaries as our own. Of these suns,—centres of planetary systems,—thousands are visible to the naked eye, millions are discovered by the telescope. Sir John Herschell, in the account of his operations at the Cape of Good Hope, (p. 391.) calculates that about five and a half millions of stars are visible enough to be *distinctly counted* in a twenty foot reflector in both hemispheres. He adds that “the actual number is much greater, there can be little doubt.” His illustrious father, estimated on one occasion that 125,000 stars passed through the field of his forty foot reflector in a quarter of an hour. This would give 12,000,000 for the entire circuit of the heavens, in a single telescopic zone; and this estimate was made under the assumption that the nebulae were masses of luminous matter not yet condensed into suns.

These stupendous calculations, however, form but the first column of

* Memoirs of American Academy, S., Vol. iii. 275.

the inventory of the universe. Faint white specks are visible even to the naked eye of a practiced observer in different parts of the heavens. Under high magnifying powers, several thousands of such spots are visible,—no longer however, faint white specks, but many of them resolved by powerful telescopes into vast aggregations of stars, each of which may, with propriety, be compared with the milky way. Many of these nebulae, however, resisted the power of Sir Wm. Herschell's great reflector, and were, accordingly, still regarded by him as masses of unformed matter, not yet condensed into suns. This, till a few years since, was, perhaps, the prevailing opinion;—and the nebular theory filled a large space in modern astronomical science. But with the increase of instrumental power, especially under the mighty grasp of Lord Rose's gigantic reflector and the great refractors at Pulkova and Cambridge, the most irresolvable of these nebulae have given way; and the better opinion now is, that every one of them is a galaxy, like our own milky way, composed of millions of suns. In other words, we are brought to the bewildering conclusion that thousands of these misty specks, the greater part of them too faint to be seen with the naked eye, are, not each a universe like our Solar system, but each a "swarm" of universes of unappreciable magnitude.* The mind sinks overpowered by the contemplation. We repeat the words, but they no longer convey distinct ideas to the understanding.

CONCEPTIONS OF THE UNIVERSE.

But these conclusions, however vast their comprehension, carry us out another step forward in the realms of sidereal astronomy. A proper notion in space of our sun and of the fixed stars as we call them has long been believed to exist. Their vast distances only prevent its being more apparent. The great improvement of instruments of measurement within the last generation, has not only established the existence of this motion, but has pointed to the region in the starry vault, around which our whole solar and stellar system with its myriad of attendant planetary worlds, appears to be performing a mighty revolution. If then, we assume that outside of the system to which we belong and in which our sun is but a star like Aldebaran or Sirius, the different nebulae of which we have spoken,—thousands of which spot the heavens—constitute a distinct family of universes, we must, following the guide of analogy, attribute to each of them also, beyond all the revolutions of their individual attendant planetary systems, a great revolution, comprehending the whole; while the same course of analogical reasoning would lead us still further onward, and in the last analysis, require us to assume a transcendental connection between all these mighty systems,—a universe of universes, circling round in the infinity of space, and preserving its equilibrium by the same laws of mutual attraction, which bind the lower worlds together.

It may be thought that conceptions like these are calculated rather

* Humboldt's *Cosmos* Vol. III, p. 44.

to depress than to elevate us in the scale of being; that, banished as he is by these contemplations to a corner of creation, and there reduced to an atom, man sinks to nothingness in this infinity of worlds. But a second thought corrects the impression. These vast contemplations are well calculated to inspire awe, but not abasement. Mind and matter are incommensurable. An immortal soul, even while clothed in "this muddy vesture of decay," is in the eye of God and reason, a purer essence than the brightest sun that lights the depths of heaven. The organized human eye, instinct with life and soul, which, gazing through the telescope, travels up to the cloudy speck in the handle of Orion's sword, and bids it blaze forth into a galaxy as vast as ours stands, higher in the order of being than all that host of luminaries. The intellect of Newton, which discovered the law that holds the revolving worlds together, is a nobler work of God, than a universe of universes of unthinking matter.

If still treading the loftiest paths of analogy, we adopt the supposition,—to me I own the grateful supposition,—that the countless planetary worlds which attend these countless suns, are the abodes of rational beings like man, instead of bringing back from this exalted conception a feeling of insignificance, as if the individuals of our race were but poor atoms in the infinity of being, I regard it, on the contrary, as a glory of our human nature, that it belongs to a family which no man can number of rational natures like itself. In the order of being they may stand beneath us, or they may stand above us; *he* may well be content with his place who is made "a little lower than the angels."

CONTEMPLATION OF THE HEAVENS.

Finally, my friends, I believe there is no contemplation better adapted to awaken devout ideas than that of the heavenly bodies; no branch of natural science which bears clearer testimony to the power and wisdom of God than that to which you this day consecrate a temple. The heart of the ancient world, with all the prevailing ignorance of the true nature and motions of the heavenly orbs, was religiously impressed by their survey. There is a passage in one of those admirable philosophical treatises of Cicero composed in the decline of life, as a solace under domestic bereavement and patriotic concern at the impending convulsions of the State, in which, quoting from some lost work of Aristotle, he treats the topic in a manner which almost puts to shame the teachings of Christian wisdom.*

* "Praelare ergo Aristoteles, 'si essent,' inquit, qui sub terra semper habitavissent, bonis et illustribus domiciliis quae essent ornata signis atque picturis, instructaque rebus iis omnibus quibus abundant li qui beati putantur, nec tamen exissent unquam supra terram; accepissent autem fama et auditone, esse quoddam numen et vim Deorum; deinde aliquo tempore, patefactis terrae faucibus, ex illis abditis sedibus evadere in haec loca quae nos incolimus, atque exire potuissent; cum repente, terram, et maria, coelumque viderent; nubium magnitudinem, ventorumque vim cognovissent, aspexissentque solem, ejusque tum magnitudinem pulchritudinemque, tum etiam efficientiam cognovissent, quod is diem efficeret, toto coelo luce diffusa; cum autem terras nox opacasset, tum coelum totum cernerent aëris distinctum et ornatum, lunaeque luminum varietatem tum crescentis tum senescentis, eorumque

"Nobly does Aristotle observe, that if there were beings who had always lived under ground, in convenient, nay, in magnificent dwellings, adorned with statues and pictures, and everything which belongs to prosperous life ; but who had never come above ground ; who had heard, however, by fame and report, of the being and power of the gods ; if at a certain time the portals of the earth being thrown open, they had been able to emerge from those hidden abodes to the regions inhabited by us ; when suddenly they had seen the earth, the seas, and the sky ; had perceived the vastness of the clouds and the force of the winds ; had contemplated the sun, his magnitude and his beauty, and still more his effectual power, that it is he who makes the day by the diffusion of his light through the whole sky ; and when night had darkened the earth, should then behold the whole heavens studded and adorned with stars, and the various lights of the waxing and waning moon, the risings and the settings of all these heavenly bodies, and the courses fixed and immutable in all eternity ; when, I say, they should see these things, truly they would believe that there were gods, and these, so great things, are their works."

There is much by day to engage the attention of the observatory ; the sun, his apparent motions, his dimensions, the spots on his disc, (to us the faint indications of movements of unimagined grandeur in his luminous atmosphere,) a solar eclipse, a transit of the inferior planets, the mysteries of the spectrum ; all phenomena of vast importance and interest. But night is the Astronomer's accepted time ; he goes to his delightful labors when the busy world goes to its rest. A dark pall spreads over the resorts of active life ; terrestrial objects, hill and valley, and rock and stream, and the abodes of men disappear ; but the curtain is drawn up which concealed the heavenly hosts. There they shine and there they move, as they moved and shone to the eyes of Newton and Galileo, of Kepler and Copernicus, of Ptolemy and Hipparchus ; yes, as they moved and shone when the morning stars sang together, and all the sons of God shouted for joy. All has changed on earth ; but the glorious heavens remain unchanged. The plow passes over the site of mighty cities ; the homes of powerful nations are desolate,—the languages they spoke are forgotten ; but the stars that shone for them are shining for us ; the same eclipses run their steady cycle ; the same equinoxes call out the flowers of spring, and send the husbandman to the harvest ; the sun pauses at either tropic as he did when his course began ; and sun and moon, and planet and satellite, and star, and constellation, and galaxy, still bear witness to the power, the wisdom and the love, which placed them in the Heavens, and upholds them there.

omnium ortus et occasus, atque in aeternitate ratos immutabileque cursus ; haec cum viderent, profecto esse Deos, et haec tanta opera Deorum esse arbitrantur." Cicero de Natura Deorum Lib. II § 30.

VIII. A COLLEGE OF ARCHITECTURE.

BY D. R. BEND, M. D., F. R. S. E.

THERE are few objects of more universal importance connected with the progress of civilization, than the right development of architecture in all its varied relations to the wants of life. It affects us in the habitations in which we dwell, in the schools in which we are educated, in the business-office and in the manufactory, in our courts of law and in our legislative assemblies, in places devoted to recreation, and in the temples dedicated to the worship of the Creator. In short, wherever man has a place to cover his head, whether it be in the palaces of the affluent or the cellar of the humble poor, in the superb mansion, with its varied suites of apartments, or in the crowded lodging-room that accommodates numbers often to an extent that horrifies those unaccustomed to such scenes, there architecture necessarily holds a leading sway. It adds to the comfort of the family fireside, or produces discomfort, originates disease, and leaves the constitution a prey to physical evils that hasten finally to a fatal termination. In public buildings it may promote the transaction of business and sustain health; or, by defective lighting, acoustics, warming, and ventilating, it may induce oppression, double or treble the efforts required in conducting public affairs, and give an imperfect, indistinct, and confused sound where it would otherwise have been clear and articulate.

But architecture is not only a useful, it is also a fine, art. It presents some of the noblest efforts of human genius, refining and spiritualizing the mind, purifying the taste, and inspiring us with reverence and devotion; or, it may tend to communicate a low and vulgar impression. It presents tangible objects that perpetually appeal to or impress our judgment and imagination. It may not be so precise and definite, so vivid and spirit-stirring as oratory, poetry, music, or painting; still, all great architectural works have a language of their own, that is felt, understood, and appreciated; while even in the humblest cottage neatness and simplicity tell their own tale, particularly where they are in harmony with the surrounding landscape. The late Councillor Beuth, whose position at the head

of one of the most important educational establishments in Prussia, gave him many opportunities of tracing the progress of art and science, upon being asked why he had so many busts of eminent men, and so many patterns of the most beautiful decorations even in the workshops for the artisans, replied that he found they contributed equally to improve their taste and to elevate their habits and associations, and that their operation could be traced on numerous occasions, even where the pupils were not addressed on the subject; their constant presence gradually and almost insensibly, awakened their sensibilities to the beautiful, and taught them to blend it with the useful. In the same manner, proportion, symmetry, and propriety in design and construction have their effect, even where there is no pretension to any unusual refinement. The hand of the architect is perpetually before us, silently and unconsciously moulding our taste, as well as supplying the buildings which we occupy.

But what has society done for the education of the architect, who exercises so important an influence on us in the design and construction of our dwellings and public buildings? Medicine, as well as law and divinity, have had their public establishments for ages; but where are our architectural colleges? the museums, libraries, and schools of construction, acoustics, warming, lighting, ventilating, fire-proofing, drainage, and finally, of design and decoration, that should be associated in an extended course of instruction, comprising all these subjects, and such other departments as it is important to associate with them? It is true, that at the most distinguished institutions for education in physical science, instruction is given in natural philosophy, chemistry, mineralogy, geology, drawing, and other subjects that may form, along with an apprenticeship to an architect engaged in the practice of his profession, a sure basis of high professional attainments. But it is considered that these are neither sufficiently numerous and accessible to meet the present wants of society, nor so special in the direction and course of studies as to give the student of architecture parallel advantages with those the student of medicine enjoys. A professorship of architecture is required for the full elucidation of this subject and many professional details to which we have adverted. It is equally true that there are other institutions of an allied character more especially adapted to the mechanic and artisan; but none of these, so far as we have learned, give the extended courses of information now contemplated,

or enjoin the curriculum that would enable a right certificate or diploma to be awarded as the result of successful examination after a complete course of study.

Professional men are well aware that in consequence of the numerous subjects now pressed upon their attention by the wants of the times, the progress of science, and the new resources placed at their disposal in materials for building, in peculiarities of construction, and in the endless varieties of modern appliances for warming, lighting, ventilating, fire-proofing, foundations, acoustic arrangements, design, and decoration, that the junior student, to keep pace with the progress of the day, will require as extended a course of study as is given in any department of learning for other professional pursuits. Even in the days of Vitruvius, that great man not only pointed out the necessity of the architect studying the nature of climate and meteorology, as it was then known, but he appears to have even entertained the opinion that he should have a very considerable acquaintance with medicine to do justice to his profession. He states, "*Disciplinam vero medicinæ novisse oportet propter inclinationes cæli quæ Græci χλιμασα dicunt, et aëres locorum qui sint salubres aut pestilentes aquarumque usus; sine his enim rationibus nulla salubris habitatio fieri potest.*"

There are, no doubt, architects who have expressed the opinion that the science of acoustics has not yet been sufficiently systematized to enable them to trust to it as a guide, in the construction of public buildings; nor are those wanting who have looked upon warming and ventilating as matters that should be assigned to other persons, and that lighting also may be left on the same footing.

But these are not considered the general views of the profession, nor will they bear a very close examination. For example, if the architect designs and executes works without reference to warming and ventilation, or artificial illumination, he may put up a building with serious defects in reference to the plans that may be subsequently proposed for these purposes, and perhaps, unintentionally and without any necessity, construct obstacles to the right treatment of these subjects, which are overcome with difficulty, and only at a great expense. If, however, the onus of all these matters were placed upon the architect, he would be under the necessity of designing, in the first instance, with a view to these objects; he would prepare the structure accordingly; consultations in cases of difficulty would take place before the execution of any structure,

and much expense and inconvenience would be avoided. On the other hand, different individuals, undertaking at first the responsibility of applying plans to a building, controlled by the architect, would be compelled afterwards to decline it, if their plans were modified to suit the architect to an extent to which they could not concur.

Warming, lighting, and ventilating crowded public buildings, occupied at all seasons and at all hours, and with an ever-varying attendance, is a large question, that should be laid down in the design before the building is commenced, whoever may be responsible for the final effect. It is obvious, however, that the medical man is the proper judge of the conditions necessary for health, the architect for design and execution, and to their assistance and co-operation that of the engineer and agriculturist should be invited to assist in placing the drainage and sewerage of cities on a right foundation, and the removal of refuse in a form that is unobjectionable and that contributes essentially, in all great cities, equally to defray the expenses of a right system of cleansing, affording manures of great value from materials that are prone otherwise to run into putrefaction and lay the foundation of disease.

Nothing can be more important to a crowded community than the right adjustment of details that are too often overlooked, particularly in the habitations of the poor, and which, when neglected to an extreme degree, are apt to be the forerunners of pestilence, and sometimes the principal cause of the decay of the city in commerce and all its institutions. Modern chemistry and medicine have pointed out very clearly the right principles on which we ought to proceed, and the best means of applying them in practice. Vitruvius appears to have viewed architecture, in all its bearings, in unison with the knowledge of the day, and to have thoroughly appreciated the great principle of the "*commune vinculum scientiarum*," and he appealed to the feelings as well as to the understanding when, in reviewing the question generally, he concluded with the observation, "*Philosophia perficit architectum animo magno*."

It is by no means desirable, nor is it necessary that the architect should, on all occasions, have to refer either to medical men, engineers, or agriculturists. But it is very important that in every village, as well as in large cities, some system or code of regulations should be laid down that may give the benefit of their sanction and experience to all the more important points for which their profes-

sional knowledge is more peculiarly available, and this being made known and enforced where-ever the public health renders it important, the primary object is gained that would lay the foundation of numerous sanitary improvements.

If any should question the importance of the study of architecture being placed on a more systematic footing than it has hitherto occupied, let him study the construction of public and private buildings, and trace in detail, after making himself acquainted with the subject, the number that are defective in some primary want. Let him begin with acoustics, and examine the condition of the House of Representatives in this respect, and he will soon perceive one of the reasons for the new buildings now in progress at Washington. Let him then go to the City Hall at New York, and read, in the recent majority report of the committee recommending plans for a great extension of that building, the complaints made of the present state of the courts of law. Or, if he prefers taking an illustration from public schools, let him study the evidence elicited in this department from hundreds of teachers by the Hon. Henry Barnard, the discourse given recently to a number of teachers at the Hall of the Board of Education of New York, by Dr. Griscom, or the report of Mr. Bulkley on the state of the schools in Brooklyn, and he will see abundant evidence as to the extent to which health must be affected by the want of a right system of ventilation in numerous schools.

Should he desire any illustrations, as to the state of architecture from the other side of the Atlantic, let him examine the recorded complaints of members of Parliament, both as to acoustics and ventilation, and the investigations and experiments made in 1835 and 1836 for establishing data for correcting the old buildings, and placing the new houses on a proper footing; let him then glance at the disputes that arose as to fire-proofing, warming, ventilating, lighting, utility, decorations, and acoustics,—disputes that led a committee of the House of Commons unanimously to support the director of the ventilation, while a committee of the House of Peers supported the architect; and let him also trace the varied proceedings that subsequently ensued, when parliamentary committees, law-pleas, and an arbitration, complicated the primary questions at issue, and he will perceive the great importance of the subject, and striking evidence of the necessity of such steps as are advocated in this communication. Or, let him cross to Paris, and inquire into the history of the Palais Royal or the Tuileries, and make him-

self acquainted with the investigations carried on under the directions of the late ex-king of France, at which he sometimes attended for hours personally, till he became satisfied of the cause, and traced the effect of great receptions, where five thousand invitations were issued, and three thousand seven hundred lamps and candles combined with the respiration of that large company, to deteriorate an atmosphere where there was no means for the discharge of vitiated air, save what the weather might permit, from time to time, by doors and windows.

Or, let him turn aside from public buildings, and view the most humble habitations in London and New York, or of many other large cities on either side of the Atlantic, and the mass of misery, discomfort, and degradation which they present at a cost greater, in general, than would provide the very same localities with comfortable, respectable, and wholesome habitations, and he will then begin to perceive this question of the improvement of architecture in its more extended ramifications. He will soon see and acknowledge its moral as well as its physical influence; that it penetrates to the habitations of individual men in every class of the community, and that there is none more likely to affect the progress of society, the resources, health, and comfort of the poor, the severity of labor, intellectual or bodily, in all indoor occupations, the origin and prevention of disease, and the general diminution of mortality, that is, the extension of the present average duration of human life.

If these be grand and glorious objects, and if the general improvement of architecture constitute one of the means by which they can be essentially promoted, it is difficult to over-estimate the great importance of placing this branch of art and science on the most favorable position for progress that can be assigned to it; and when it is recollected how many affiliated trades and occupations each contribute a share to the modern architecture of large cities, it will become abundantly evident that each in its own department would be benefited by a more extended knowledge of the different positions or special effects which it may be called on to satisfy, as in the most desirable arrangements for heating and ventilating, for the preservation of a pure external atmosphere, for lighting, and numerous local adaptations, as various in detail as the varied climates in which man lives, the occupations with which he may be engaged, and the resources at his command. An harmonious result

is the great object, and for this nothing is more essential than harmonious co-operation in all the varied subdivisions of labor that are necessary for architectural structures, as well as that "design" and superintendence that connects all the individual parts, and is responsible for the final effect.

A glance at the great works of ancient and modern times will undoubtedly prove how much has been done by the genius and perseverance of the architect, notwithstanding the many difficulties with which he has had to contend. But that is no reason why, in a profession that demands so much experience and learning in its higher departments, the plain and obvious means of instruction should not be resorted to that are adopted for other professional pursuits. The apprenticeship to an architect engaged in the practice of his profession is ever variable in the opportunities it affords, in the practice it exhibits, and in the calls which it makes upon the energies of the student. But, as a rule, while it affords opportunities as important to him as the hospital and the surgery does to the student of medicine, initiating him in the practice of his art, and introducing him to the business of life, it is not always practicable for him to lay there that foundation for future excellence, and that broad and comprehensive basis on which his professional knowledge should be founded.

Further, in academical institutions devoted to science, specimens, models, and drawings would necessarily accumulate from year to year in a department devoted to architecture, such as no individual architect could be expected to command. A museum of chemistry and economic geology, showing all the varied resources at the disposal of the architect, the changes to which they are subject from exposure in different climates, and the numerous cements used in different places, with specimens pointing out defects to which they are liable, and the means of correcting them, would form a treasure that would become more valuable each succeeding year. Specimens of all products of art and manufacture might be added, if not comprised in another museum in the same place. Or, to take another example, with how much facility could a public educational establishment commence the collection of a series of plans and sections, accompanied with a minute description of the acoustic construction of different public buildings, of the causes of success or failure in this respect, of their peculiarities as to speaking and hearing, and also in relation to vocal and instrumental music! How

great a fund of valuable information would be secured in this manner, multiplied by exchanges with parallel institutions abroad, and accessible for consultation at all times when a church, a lecture-room, or any other public building is designed!

Further, let it be recollected that wherever there is an existing college devoted to physical science, or any of its departments, there mathematics, chemistry, natural philosophy, geology, and mineralogy are usually taught, and these afford the great foundations on which the studies of the young architect must rest. A comparatively slight addition to these establishments would enable them to secure all the advantages of a college of architecture.

In other places where no such advantages are available, or where a satisfactory arrangement cannot be made, the extent of building, and the number of public works and habitations in progress must determine the probable amount of students and the accommodation required. It should be remembered that a great public object is secured by such institutions, and that numbers may avail themselves of the opportunities which the individual classes present, though the professional architect alone may desire to pursue the full course of study which they embrace. Every facility should be accorded to them, therefore, which municipal authority can bestow, and the architectural museum should always be an addition of great public interest which can be enriched from year to year with models, specimens, and drawings, and form in the progress of time a valuable collection highly useful for the student, and available also for consultation by the professional architect.

In European countries, colleges and professorships of architecture are very thinly scattered, and are in a great measure of very recent institution. Polytechnic institutions, in some cases, give a great amount of architectural information; and technological associations for industrial purposes, as well as schools of mines, arts, and manufactures, including agriculture, have received more extended support. But generally speaking, even in such cities as Berlin and Paris, as well as in London, they have only in recent years been attaining the conviction that the warming, ventilation, acoustics, lighting, and drainage of large buildings, and of individual habitations, can be placed on a much more improved footing than they had previously presented, and combined with resources for preserving a purer external atmosphere than the state of the open gutters in the "Unter den Linden" at Berlin, the cesspools in

Paris, or the condition of the Thames in London, rendered practicable in the buildings in their vicinity. A great school of architecture, accordingly, complete in all the resources which the profession requires, is still a great desideratum, though at Berlin, Paris, and London, we may trace the most extended arrangements hitherto made for this purpose. It will be obvious that until the right relation of warming, and ventilating, and lighting was unfolded in reference to the other departments of architecture, the study of this subject, however much it might be extended as a fine art, could not assume the position it ought to hold, and sustain health in the crowded assemblies, with all the brilliancy of gas-lights and other comparatively modern inventions. The invisibility of the atmosphere has long prevented its importance being recognized in architectural structures, but in proportion as perfection increased in the adjustment of air-tight fittings at doors and windows, the want of fresh air told more and more upon the constitution, and finally led in recent years to a much more systematic series of appliances, by which a perpetual change of air can be sustained, even in the most crowded assembly, if due facilities be provided in the original structure. This may be considered as one of the greatest advantages available for modern buildings, and hence architecture, with all the peculiarities of structure, decoration, and resources required for supplying public buildings with from five or ten to fifty thousand cubic feet of air per minute, presents a more extended and systematic object of study than was contemplated in schools and academies previously instituted.

In some European universities and colleges the institution of professorships of architecture has been resisted or neglected, and no curriculum is enforced on students of architecture, nor diplomas awarded for proficiency; but many architectural associations or institutes have been formed by members of the profession, which are generally attended by their clerks and apprentices when meetings are held for papers or discussions and illustrations of architectural questions; and from the general tone and character of the opinions expressed, there can be no little doubt that the formation of architectural schools will soon ensue. In many cases mechanics' institutions and schools of art have been the principal sources of instruction to artisans and others anxious for information in reference to practical architecture, and these, along with schools of design, have been largely attended by numbers of the working-classes, particu-

larly in London, Edinburgh, Manchester, and Glasgow, while parallel institutions are also found in continental European cities. And it is only justice to the latter to say that they have, in many instances, not only preceded those formed in Great Britain, but manifested their practical effects in the acknowledged pre-eminence in the beauty of the designs and the workmanship shown at the great exhibition in 1851.

But in no country, perhaps, is it likely there will be more building and rebuilding, more laying out of new towns and villages, and a greater extension of large cities, than in America. It is more practically interested, accordingly, in the facilities for the study of architecture, than most other nations.

It may further be anticipated that the increasing education and intelligence of a whole community, and the general progress of arts and manufactures, will dispose the whole population to avail themselves more readily of every well-adjusted practical improvement. How many in modern times have advocated instruction in common things! And how largely is such instruction facilitated when combined with popular lessons in the elements of different branches of human knowledge! The acquisition of the knowledge of individual useful facts must always be important; but we apprehend that those who have shown that the elements of science in a popular form are suitable subjects of instruction, even for the humblest classes, placed the same idea on a more desirable and universal basis. Take, for instance, the facts which chemistry unfolds. Is there any mode by which more available information could be conveyed for ordinary purposes than by teaching systematically and popularly the leading facts it conveys, as to the nature of air, earth, and water, and the production of heat and cold, the nature of fuel, combustion, lamps, gas and candles, &c., &c., &c.? But whether conveyed systematically or in any other manner, this general diffusion of the elements of science, taken in conjunction with the many new resources and occupations to which it gives rise, is an additional reason why the junior architect should have every possible facility given to him in the course of his professional education, that may enable him to combat and overcome the varied details and difficulties he may have to meet in the erection of all the varied works which art and manufactures, as well as public buildings and the habitations of the people, may demand.

CURRICULUM FOR STUDENTS OF ARCHITECTURE.

It is not desirable that any curriculum of architecture should be too rigidly enforced, particularly when first instituted, as the varied opportunities which the individual pupils may have had, their different tastes, progress, and natural capabilities require the judicious exercise of the discretionary power that is necessary in all educational establishments.

The highest honors of the profession should, as a general rule, be accorded only to those who pursue the systematic course required, and pass the necessary examinations; but in conducting these, proper weight should be attached to the fact that some will excel in design, decorations, drawing or painting, others in construction and mechanical arrangements, or in surveying, estimating, and making specifications. Though such subdivisions take place to a great extent where an architect is engaged in large practice, the student should undoubtedly make himself acquainted, as far as he has the opportunity, with all the departments of his profession, as it is impossible for him otherwise to plan, direct, and execute any work confided to his care, and check the operations of his assistants. The public service requires the whole of the necessary work to be done, in whatever manner the details may be carried out, and the more enlarged, accordingly, the basis of his studies, if in right proportion to the time he has to devote to them, the greater will be his confidence and capability in entering on the practice of his profession.

In submitting the following outline as a guide in the consideration of this question, it is presumed that the student shall have had a good elementary education; and should he have received previous information in chemistry, physiology, drawing, and other kindred subjects, it will be an advantage to him in proportion to the extent he may have cultivated them. The right adjustment of preliminary elementary education in science is a matter on which very considerable difference of opinion still exists. For our part, we have been long partial to its introduction when not pushed too far, and every point that is taught is made thoroughly intelligible; nor is it easy to see in what manner the professional student in any department of science can have time to attend to all the varied objects which the progress of the age is now crowding upon his attention, unless the burden is lightened by the introduction of select portions

of science in elementary schools. The selection made could be such as to be important to all the pupils, whatever might be their future occupations.

COURSE OF STUDY RECOMMENDED FOR STUDENTS OF ARCHITECTURE.

I. GENERAL STUDIES, referring to the materials of which the globe is composed, their power and capabilities, and their relations to the human frame.

1. Chemistry—History of the elements of which the globe is composed, and of their combinations.
2. Mechanical Philosophy, including the mutual relations of solids, liquids, and gases.
3. Heat, Light, Electricity, and Magnetism.
4. Mineralogy and Geology.
5. Meteorology.
6. The General Structure and Physiology of the Frame of Man; Principles of Hygiene.

II. SPECIAL STUDIES.

1. The Materials used in Building, natural and artificial—their strength and capabilities.
2. The Principles and Practice of Design and Construction—the different orders and styles of architecture.
3. Outline of the History of Architecture as a Fine and as a Useful Art—the monuments of antiquity—the peculiar works of modern times.
4. Public Buildings, including Schools, Churches, Law-Courts, Prisons, Hospitals, Theatres, and Gymnasias for exercise and recreation.
5. Habitations for the People—extreme importance of the tenement question, and of the right construction of the habitations of the poorer classes in all large cities; its relation to the wants, habits, and morals of the inhabitants.
6. Special Buildings for Trades—Workshops and Manufactories.
7. The construction requisite for Acoustics, Warming, Cooling, Lighting, Ventilating, Fire-proofing, Draining, and Sewerage, the collection and removal of refuse, and the importance of due provision being adjusted for all these purposes before the execution of any building is commenced.
8. The Selection of Sites for Buildings, Superficial Drainage, the peculiarities required in different classes of foundations.
9. The special architecture required in destroying noxious fumes and exhalations from drains, manufactories, and other houses, and for facilitating the cleansing of large cities and villages, and the general preservation of the public health; the objects and conduct of quarantine on shore.
10. The Principles and Practice of Decorations—the influence of colors.
11. Plans, Drawings, and Specifications; architectural books required in conducting business accounts.
12. Preparing Estimates and measuring executed Work.

III. It is presumed that the student will carry on a systematic series of exercises in drawing, perspective as well as plan drawing, including isometrical perspective, that he will equally pursue his mathematical studies in relation to every department of the profession which he may have to cultivate, and engage as soon as his time permits, or so adjust his studies as to enable him to become an apprentice to an architect, where he can see daily the realities of his profession. On the whole, however, nothing should be undertaken, if practicable, that will interfere with the right prosecution of his studies.

IV. Lastly, a workshop and laboratory should be provided, in which the student shall have the opportunity of becoming practically acquainted with Experimental Chemistry, Carpentry, and mechanics generally, and be enabled to test materials, and make or direct the construction of models that will facilitate all his labors.

The union of utility, beauty, and economy are the great desiderata in the study of architecture, and whether we refer to the topics treated in the Hon. H. Barnard's *School Architecture*, or to Mr. Ruskin's *Stones of Venice*, or to any other important work on a subject so extensive and inexhaustible as architecture, we shall find ample proof that few practical measures are more intimately associated with the progress of civilization than the right foundation of colleges or schools and museums of architecture.

In the above scheme, nothing has been recommended beyond the imperative wants of the public service, and the demands continually made upon the architect. It is for others to judge how far they have been correctly estimated, and whether the results, if the system be adopted, with such modifications as local circumstances may indicate, would not repay a hundred-fold any outlay which the State, the public, or the profession may expend upon it.

The foundation of a school of Naval Architecture is no less important than that which has engaged our attention in these pages; but this is a question on which at present we do not enter.

NOTE.—Dr. Reid, to whom we are indebted for the foregoing article, is the well-known author of "*Illustrations of the Theory and Practice of Ventilation*," and is now on a visit to this country. We are rejoiced to learn that arrangements have been made with him for a Course of Lectures on the great practical subject of Sanitary Reform as connected with architecture, domestic and public, with drainage, quarantine, &c., before the Smithsonian Institute at Washington, and the Lowell Institution in Boston.

Dr. Reid's researches on Respiration and Acoustics were conducted principally at his class-room in Edinburgh, and subsequently at the Houses of Parliament, where, for many years, he directed the ventilation of both Houses of Parliament, in the old as well as in the new building, till differences arose between him and the architect, when a committee of the House of Commons sustained him unanimously, while the committee of the House of Peers supported the architect. Dr. Reid never acted there subsequently, except under protest disapproving of the course then pursued at the Houses, and finally carrying his case at an arbitration, where an investigation took place that occupied thirty days. Dr. Reid's plans have been introduced in numerous public works and other buildings; and at St. George's Hall, Liverpool, the municipal authorities sustained him in applying similar arrangements to those that he had proposed for the new Houses. Dr. Reid was consulted by the government both at Paris and St. Petersburg, and has executed many public works in different parts of Great Britain. One architect alone, Thomas Brown, Esq., of Edinburgh, has applied his plan in forty-eight public and private buildings. Dr. Reid had upwards of three thousand professional pupils at Edinburgh, where he taught chemistry, theoretically and practically, before he entered on the acoustics and ventilation of public buildings. He also was one of the Commissioners of Health appointed by the British government in reference to populous districts in England and Wales, and in the year preceding its institution, the committee of the Privy Council on Education distributed a thousand tickets to teachers who attended a course of lectures he gave on public health—tickets and outlines of the course having been sent from the same source to the members of both Houses of Parliament. He has also paid much attention to the subject of quarantine, and ventilated a number of ships. Dr. E. came to this country with a letter from Mr. Buchanan, when American Ambassador in London, to the President.

EDITOR.

IX. THE PUBLIC RECEPTION TO GEORGE PEABODY, AT DANVERS.

WE are not very fond of fêtes of any kind, or ovations to the living for any degree of merit, but we were gratified beyond any former experience in the Public Reception given to **GEORGE PEABODY** of London, by the people of Danvers and South Danvers, Mass., in pursuance of a unanimous vote of the two towns, in the grateful acknowledgment of his many acts of liberality, and public spirit, and especially for his establishment and endowment of the Institute for the promotion of knowledge and morality, and for the institution of Prizes for the encouragement of scholarship and good behaviour in the pupils of the Public High Schools. It was a spontaneous and hearty tribute of respect and gratitude by men and women, by old and young, by persons of both sexes, and every employment, to one, who had gone out from among them—with only that culture which an ordinary district school, such as the ordinary district school was fifty years ago, could give to a boy, in attendance only for a few months in each year, and for only three or four years of his life—and with only that capital which is represented by **native sagacity, integrity, and a resolute will**—and yet by that sagacity, integrity and perseverance achieving a position in the commercial world second to no other individual or house in the great centre of business—and yet everywhere—on either side of the Atlantic, in his days of poverty and of affluence—preserving a republican simplicity of character, dress, manner, a tender filial attachment to the hearth-stone, and friends of his youth, and at all times and everywhere using a portion of his earnings to advance purposes of patriotism, hospitality, humanity and education. If Mr. Peabody had been President of the United States, with lucrative offices in his gift, or a Military Chieftain, fresh from victorious battle-fields, more people could not have turned out to receive him or decorated the streets and houses, public and private with a finer display of arches and flowers, of banners and inscriptions, to greet him on his return, than was done for him, a successful man of business and a gentleman without office and without title. Truly

—————“Peace hath her victories,
No less renowned than war.”

The day—the ninth of October, 1856, was a perfect specimen of a bright, warm, autumnal day and of itself disposed the heart to the utterance of thanksgiving and kindly sentiment. At half past nine A. M., Mr. Peabody arrived in his carriage from Georgetown, where his sister resides, at the confines of Danvers and was received by a cavalcade of some three hundred ladies and gentlemen, under an evergreen arch hung with flags and streamers—and from that point, escorted to South Danvers, where the procession was formed, which gathering length and strength, and variety, proceeded through the principal streets to the Salem line—the stores and shops, the dwellings on either hand, and especially those where his old friends reside, being decorated with tasteful devices and inscriptions, expressive of the sense entertained of the character and services of the guest, too numerous and varied to be remembered or described in detail. Among them we noticed the following:

*The old town of Danvers was divided into two portions by act of Legislature in 1854—to the Southern portion was given the name of South Danvers.



Engraved from a portrait by J. Peck, 1840.

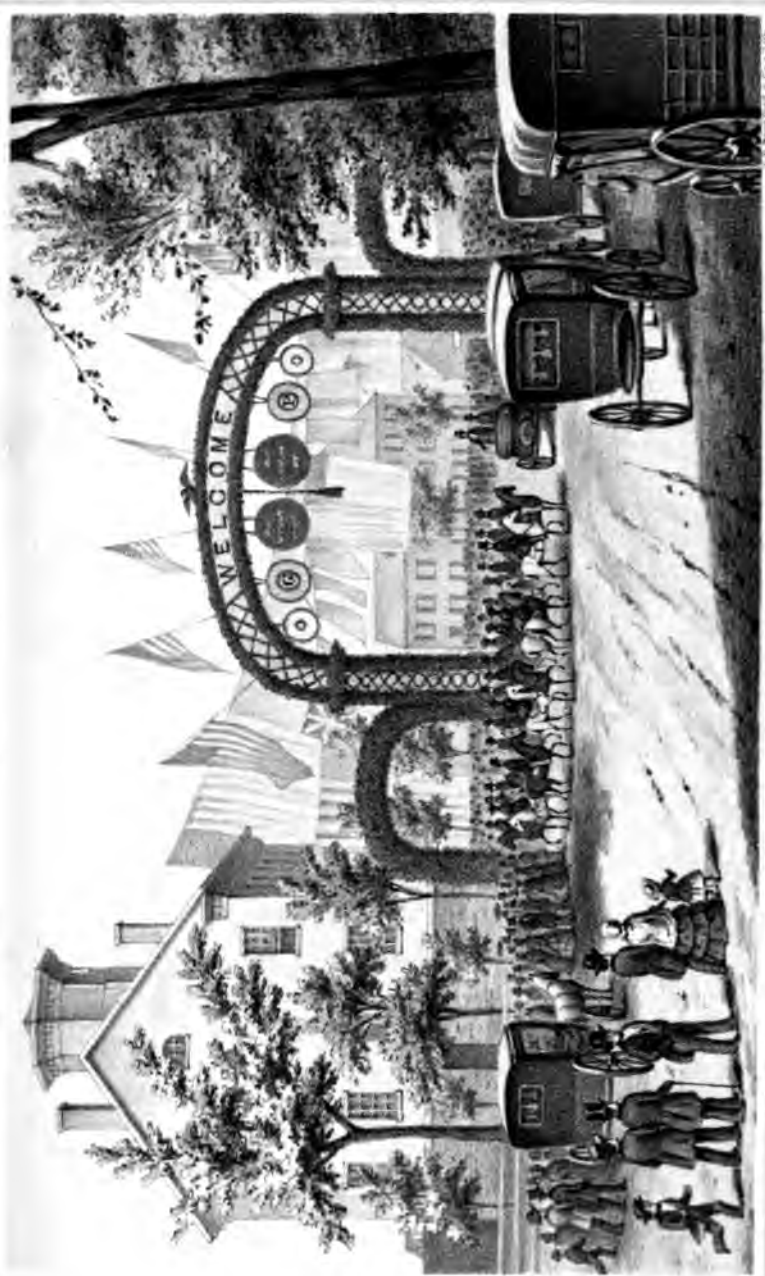
George Peck

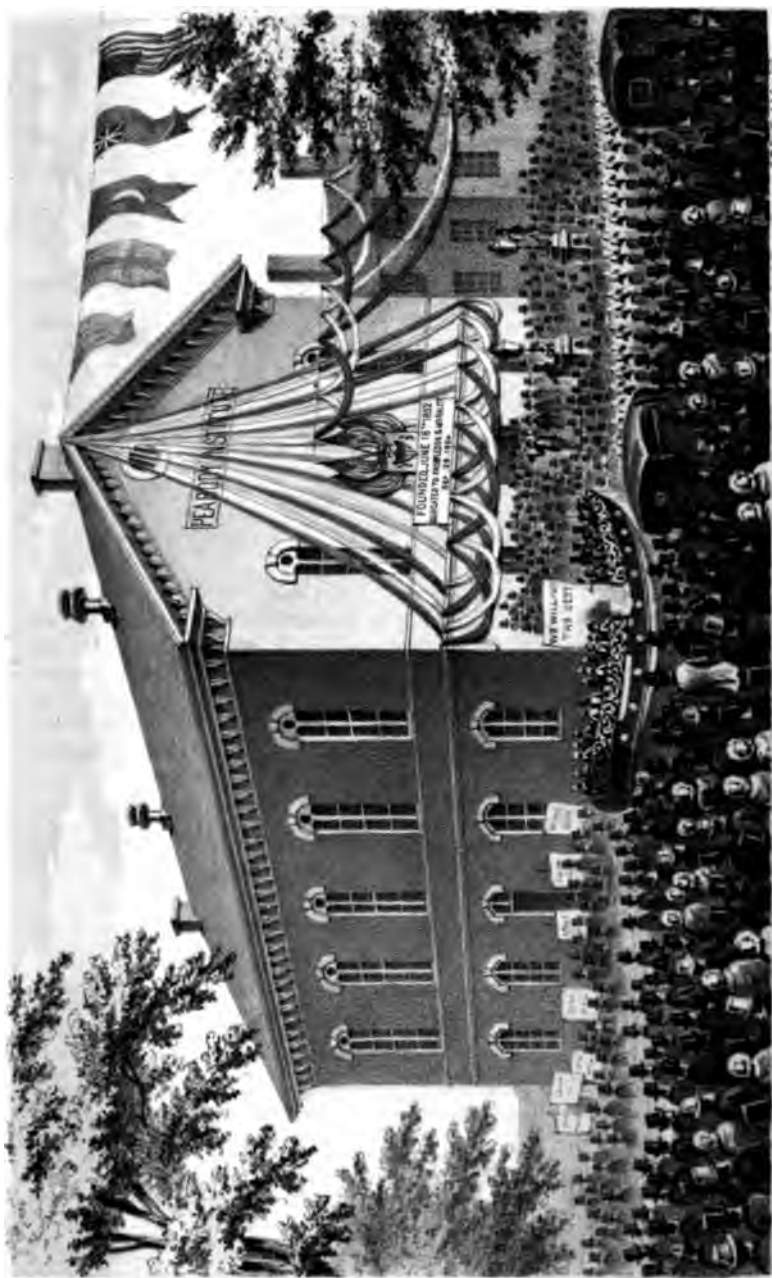
1840-1841



George Schubert







THE PEABODY INSTITUTE AT THE TIME OF THE ADDRESS OF WELCOME.

"Free Schools—the Nation's strength."
 "The true value of wealth is right use."
 "Action is the life of true virtue."
 "Education, a debt due by the present to future generations."
 "God loveth the cheerful giver."
 "Honor to him who lives to honor his country."
 "A friend at home and abroad."
 "International Friendship."

The procession was composed as follows:

Escort—Independent Corps of Cadets of Salem, Capt. Foster.
 Chief Marshal and aids.
 Committee of arrangements, on foot.
 Sixty carriages, carrying Mr. Peabody, the Governor of the State, Mayor of Boston, and distinguished guests.
 Municipal Authorities of the towns of South Danvers and Danvers, on foot.
 Past and present members of Board of Trustees of the Peabody Institute.
 Members of the Library and Lyceum Committees, past and present, of the Institute.
 Teachers and Pupils of Peabody and Holton High Schools, and the holders of the Peabody Medal.
 Grammar, Intermediate and Primary Schools of the two towns.
 Citizens and Strangers.
 Marshal of Fire Department and Aids.
 Engineers and Firewardens of the Fire Departments of the two towns.
 Engine Companies arranged in the order of precedence as established under the old Town of Danvers.
 Cavalcade of Ladies accompanied by Gentlemen.
 Cavalcade of Gentlemen.

At half past 12 o'clock the head of the procession, on the return march, arrived at the Peabody Institute building, in front of which a platform had been erected. The school children and people were collected in immense numbers about the building. On the platform were Mr. Peabody, the committee of arrangements, and invited guests. From this platform the Hon. A. A. Abbott addressed a brief speech of greeting to citizens and guests, and of welcome to Mr. Peabody.

"A few weeks since, information was received that Mr. George Peabody of London, was about to revisit his native country. Whatever emotions may have been excited elsewhere by this news, there was no place where the feeling was so ardent, so deep, so spontaneous as *here*. In the first place, we shared *equally, at least* with others, the general respect for his public character and private virtues. With at least *equal* admiration we looked upon a long career of patient, persevering, successful effort, and over a whole life illuminated by the light of manly honor and christian charity. With certainly *as much* of patriotic pride we regarded that constant endeavor to vindicate the honor of our country in foreign lands, to sustain the credit of the State, to make the American name respectable abroad, and those unceasing labors, successful above all, that diplomacy or arms could accomplish, to strengthen the bonds of fellowship and love between two great and kindred nations, whose true interests and dearest hopes are and must forever be identical and one.

But there was something above and beyond all this, and peculiar, fellow-citizens, to us. *Here* was Mr. Peabody's home. *Here* slumbered the honored dust of his fathers. *Here*, "native and to the manor born," he passed his youth and the pleasant days of his early life. *Here* were many of those who had been his school-fellows and playmates. And when young ambition, and devotion to those whom misfortune had made his dependents, and the first stirrings of that great energy, already indicating the future triumph, led him forth to other and broader fields of labor, the eyes of his townsmen, like their prayers and best wishes followed him; and from *that day to this*, the events of his life and his whole career have been a part of the public and most treasured property of his town. And all along, what returns have there been and how warmly has this

regard been reciprocated. There has been no time when we have not been in George Peabody's debt. Separated from us by the wide ocean, living amid the whirl and roar of the world's metropolis, engrossed with the weightiest concerns, flattered and caressed by the titled and the great, that "heart untravelled," has yet clung steadfast to its early love. While, wherever his lot has been cast, every worthy object of charity, and every beneficent enterprise has received his ready aid, in an especial manner has he remembered and endowed us. When fire desolated our village and swept away the sacred house where in childhood he listened to those truths which have been the guide and solace of maturer years, *he* helped to rebuild the rafters, and point again the spire to heaven. When a pious local pride would rear an enduring monument to the memory of our fathers, who fell in the first fight of the Revolution, it was *his* bounty, although he lived beneath the very shadow of the crown, from which that revolution snatched its brightest jewel, that assisted in raising the granite pile, and transmitted to future ages the names and heroic deeds of our venerated martyrs. So when, advancing a new step in the course of public education, this town established two High Schools for the better culture of its youth, it was his untiring generosity that awoke new life, and kindled fresh desire for knowledge, by ordaining a system of prize medals, carefully discriminating and judicious, and which will embalm his name in the affections of unborn generations of youthful scholars. And lastly, when four years ago, the town of Danvers celebrated the Centenary of its municipal life, it was the same constant faithful friend that sent to our festival that noble sentiment, "Education"—a debt due from present to future generations,—and, in payment of his share of that debt, gave "to the inhabitants of the town," a munificent sum "for the promotion of knowledge and morality" among them. Since that day his bounty has not spared, but has flowed forth unceasingly, until the original endowment has been more than doubled, and until here, upon this spot, is founded an institution of vast immediate good, and whose benefits and blessings for future years, and upon the generations yet to come, no man can measure.

Such are some of the reasons why the news of Mr. Peabody's contemplated visit to this country was received with peculiar emotions *here*,—why every heart was warmed,—why all the people of one accord desired to see his face and hear his voice,—and why the towns of Danvers and South Danvers, in their corporate capacities and in obedience to the popular will, extended to him on his arrival upon our shores, an invitation to visit their borders. That invitation he accepted. Denying all others he cheerfully embraced this. And now, to-day, we have come forth to meet and greet him. And to-day *he* has come and *here he stands*, our distinguished countryman, our beloved townsman, our noble benefactor and friend!

And now, sir, what shall I say to *you*? and how shall I declare the sentiments and express the feelings of those in whose behalf I speak? Look upon the scene before you! This great throng, ready to break into tumult with joy, yet calm with the stillness of deep emotion,—these thousand of uplifted faces, every countenance radiant and beaming, as every heart is throbbing, with gratitude and love,—*this* and *these* are more expressive than any words of mine, and silence on my part would be more eloquent than speech. The most that I can do, sir, is to bid you *welcome*! And how feeble seems the utterance of the mere word in contrast with the living realization of its deep meaning. From the moment you came within our limits to this hour, in every street, at every corner, at almost every dwelling, in *every* face, you have witnessed its expression. And although, sir, we are unable to display the pomp of great cities or royal pageantry, yet I doubt not that the honest affection which has prompted our humble endeavors, has touched the manly, loving heart which no rude conflicts with the world has been able to harden, and which beats alike and ever true within the Courts of Kings and in its humble village home.

To this and more, Mr. Peabody returned his thanks, acknowledging that while he had felt it necessary to decline many proffered hospitalities, he could not resist the impulse to accept the invitation of his former townsmen and to revisit scenes once so familiar; "and yet this vast gathering, these evidences of respect, these children and grand-children of my old schoolmates and playfellows, these changes which

time has wrought in families, and localities, quite unman me. Though a kind Providence has granted me unusual success in the pursuit of fortune in other lands, I am still at heart the humble boy who left yonder unpretending dwelling, many, very many years ago." Turning to a yard within which over twelve hundred children were gathered he said:

One of the most pleasing and touching incidents of this morning, is the large number of scholars who have come forth to bid me welcome and who now surround me. In addressing a few words to you, my dear young friends, I would bid you remember that but a few years will elapse before you will occupy the same position towards your own children which your parents now hold towards yourselves. The training you are now receiving is a precious talent, for the use or abuse of which each will, on a future day, be called upon to give a severe account. May you then be ready to render up the talent with "usury."

There is not a youth within the sound of my voice, whose early opportunities and advantages are not very much greater than were my own, and I have since achieved nothing that is impossible to the most humble boy among you. I hope many a great and good man may arise among the ranks of Danver's boys assembled here to-day.

Bear in mind, however, that to be truly great, it is not necessary that you should gain wealth and importance. Every boy may become a great man, in whatever sphere Providence may call him to move, steadfast and undeviating. Truth,—fearless and straightforward integrity, and an honor ever unsullied by an unworthy word or action, make their possessor greater than worldly success or prosperity. These qualities constitute greatness; without them you will never enjoy the good opinion of others, or the approbation of a good conscience.

To my young female friends I would say:—Remember that there have been and are, great *women* as well as great men, great in the domestic graces as daughters, as wives, and as mothers, and I trust that future times may record many a name so distinguished, whose seeds of good were sown within this town; and allow me to hope that my eye now rests upon some of them.

May the advice I have given you be impressed upon your young hearts. It is given with great sincerity, by one who has had much experience in the world, and although Providence has smiled upon all his labors, he has never ceased to feel and lament the want of that early education which is now so freely offered to each one of you. This is the first time we have met. It may prove the last, but while I live I shall ever feel a warm interest in your welfare. God bless you all.

At two o'clock the company ladies and gentlemen in about equal numbers, who were provided with tickets, proceeded to a mammoth tent, beneath which tables to accommodate 1500 guests, were spread with a substantial and tasteful repast, after which came "the feast of reason and the flow of soul"—only in portion of which we can transfer to our pages. To the sentiment, proposed by Hon. R. S. Daniels, President of the Day, in an appropriate speech.

A cordial and hearty welcome to the distinguished citizen, eminent merchant and Public Benefactor.

Mr. Peabody responded as follows:

Mr. Chairman, Ladies, and Gentlemen.—The reception you have given me to-day overpowers me. Few boys ever left New England town under circumstances more humble than I did. None could return more honored—honored, too, where honor is said not to be usual—in his own country and among his own kindred. I feel proud, as well as grateful, at these testimonials, so far beyond my merits, but so gratifying to my heart, and which I shall ever esteem the greatest honor of my life.

You have alluded, Mr. Chairman, to my course as a merchant. Heaven has been pleased to reward my efforts with success; and has permitted me to establish, through my own exertions, a house in the great metropolis of England,

which I think my mercantile friends here present will bear me out in saying sustains a high character and credit throughout the world. Coming back to the home of my childhood, I honestly confess that I feel great pride in this, and I do not believe that you will accuse me of egotism in saying so. I have endeavored in the constitution of its members, and the character of its business, to make it an *American house*, and to give it an *American atmosphere*, to furnish it with American journals, to make it a centre for American news, and an agreeable place for my American friends visiting London. That I have partially succeeded in doing so, I think I may reasonably conclude, from the flattering testimonials which I have received since my arrival in this country.

You have also been pleased to allude to my humble efforts to promote good feeling between Great Britain and the United States, by increasing the social intercourse between my English and American friends. That a cordial alliance ought to exist between these two countries, founded on social intercourse and personal friendship, as well as mutual interests, is an opinion which I share with most persons who have had the opportunity to see both. I am happy indeed, if my humble efforts have aided in promoting such good feeling. If there are two nations on the face of the earth that ought to be connected by the closest ties of mutual good will, they are these two countries. It is not in the language ordinarily used, that I point to the similarity in their institutions—their laws—their language,—and their commercial interests. The exports of this country to Great Britain are larger than to all the world besides; the exports from Great Britain to this country, though not relatively so large, are on an equally gigantic scale; a monetary crisis in one country is generally followed by like results in the other. A change in financial policy on the one side is met by a responsive change on the other. The journals of each country reflect, at length, each other's views and sentiments.

Out of this very intimacy of relations, there grows frequent cause of difference, but I am sure, that notwithstanding the little outbursts of jealousy which occasionally show themselves, England is not less proud of her offspring, than is America of the parent stock. I assure you, that from the universally beloved queen who rules those realms, down to her humblest subject, one feeling of good will towards this country prevails. I say this with the greater confidence since I see around me many gentlemen who have had the opportunity to see for themselves whether these things are so. To none can I appeal with more confidence than to you, sir, (turning to Mr. Everett) who have filled the most important office abroad, in the gift of our government, with so much honor to your own country, and so much satisfaction to those to whom you were accredited.

I have been reminded to-day that one who followed worthily in the footsteps of my friend on the left, has passed away. The corner stone of the Peabody Institute was laid by Abbott Lawrence; but before it was completed, his pure spirit had left this world. I admired him for his practical talents; I respected him for his virtues, and I loved him as a friend. Like myself, he was convinced of the great importance of conciliation, forbearance, and mutual good will between England and America. During his whole mission, he labored earnestly to cultivate these feelings, and I take a melancholy pleasure in adding my humble tribute to his memory, in testifying not only to the profuseness of his own hospitalities, and the constancy of his own labors to these ends, but to the heartiness and zeal with which he co-operated in my more humble efforts. The

memory of such a man as Abbott Lawrence is doubly blessed. Allow me to conclude by proposing a toast:—

"Our old town of Danvers, as it was constituted in 1752—May she know none but civil divisions."

After a speech by his Ex-Governor Gardner in acknowledgment of the sentiment proposed in honor of Massachusetts, Edward Everett was called up to speak to the following sentiment:

"England and America,—Pulchra mater, pulchrior filia,—long may they flourish in the bonds of peace, rivals only in their efforts to civilize and christianize the world."

In response to this toast, Mr. Everett spoke substantially as follows:—

Mr. President,—I suppose you have called upon me to respond to this interesting toast, chiefly because I filled a few years ago a place abroad, which made me in some degree the associate of your distinguished guest, in the kindly office of promoting good will between the two great branches of the Anglo-Saxon or Anglo-Norman race (for I do not think it matters much by which name you call it,) "the fair mother and the fairer daughter," to which the toast alludes. At all events, I had much opportunity, during my residence in England, to witness the honorable position of Mr. Peabody in the commercial and social circles of London, his efforts to make the citizens of the two countries favorably known to each other, and generally that course of life and conduct, which has contributed to procure him the well deserved honors of this day, and which shows that he fully enters into the spirit of the sentiment just propounded from the chair.

To the prayer of that sentiment, sir, I fully respond, desiring nothing more ardently in the foreign relations of the country, than that these two great nations may be rivals only in their efforts to promote the welfare and improvement of mankind. They have already done, they are now doing much at home and abroad, to promote that end by the arts of peace. Whenever they co-operate they can sweep everything before them,—when they are at variance, when they pull opposite ways,—it is the annihilation of much of the moral power of both. Whenever England and America combine their influences in promoting a worthy object, it moves forward like a vessel propelled by the united force of wind and steam; but when they are in conflict with each other, it is like the struggle of the toiling engine against the opposing tempest. It is well if the laboring vessel holds her own;—there is danger that she may be crowded under the mountain waves, or drift upon the rocks.

It is quite obvious to remark, on this occasion and on this subject,—while you are offering a tribute of respect to a distinguished man of business—that these two great nations, which are doing so much for the advancement of civilization, are the two leading commercial nations of the world; that they have carried navigation and commerce to a height unknown before. And this consideration, sir, will serve to justify you and your fellow-citizens, if they need justification, for the honors you are bestowing upon the guest of the day, as it will the other communities in different parts of the country, which have been desirous of joining in similar public demonstrations of respect. Without wishing to disparage the services which command respect and gratitude, in the walks of political, military, or literary life, it is natural that in a country like the United States, where commerce is so important an interest, you should be prompt to recognize distinguished merit in the commercial career; a career of which,

when pursued with diligence, sagacity, enterprise, integrity, and honor, I deem it not too much to say, that it stands behind no other in its titles to respect and consideration; as I deem it not too much to say of commerce, in its largest comprehension, that it has done as much in all time, and is now doing as much to promote the general cause of civilization, as any of the other great pursuits of life.

Trace its history for a moment from the earliest period. In the infancy of the world its caravans, like gigantic silk worms, went creeping through the arid wastes of Asia and Africa, with their innumerable legs, and bound the human family together in those vast regions as they bind it together now. Its colonial establishments scattered the Grecian culture all round the shores of the Mediterranean, and carried the adventurers of Tyre and Carthage to the North of Europe and the South of Africa. The walled cities of the middle ages prevented the arts and refinements of life from being trampled out of existence under the iron heel of the feudal powers. The Hanse towns were the bulwark of liberty and property in the north and west of Europe for ages. The germ of the representative system sprang from the municipal franchises of the boroughs. At the revival of letters, the merchant princes of Florence received the fugitive arts of Greece into their stately palaces. The spirit of commercial adventure produced that movement in the fifteenth century which carried Columbus to America, and Vasco di Gama around the Cape of Good Hope. The deep foundations of the modern system of international law were laid in the interests and rights of commerce, and the necessity of protecting them. Commerce sprinkled the treasures of the newly found Indies throughout the western nations; it nerved the arm of civil and religious liberty in the Protestant world; it gradually carried the colonial system of Europe to the ends of the earth, and with it the elements of future independent, civilized, republican governments.

But why should we dwell on the past? What is it that gives vigor to the civilization of the present day but the world-wide extension of commercial intercourse, by which all the products of the earth and of the ocean—of the soil, the mine, of the loom, of the forge, of bounteous nature, creative art, and untiring industry—are brought by the agencies of commerce into the universal market of demand and supply. No matter in what region, the desirable product is bestowed on man by a liberal Providence, or fabricated by human skill. It may clothe the hills of China with its fragrant foliage, it may glitter in the golden sands of California, it may wallow in the depths of the Arctic seas, it may ripen and whiten in the fertile plains of the sunny South, it may spring forth from the flying shuttles of Manchester in England, or Manchester in America—the great world-magnet of commerce attracts it all alike, and gathers it all up for the service of man. I do not speak of English commerce or American commerce. Such distinctions belittle our conceptions. I speak of commerce in the aggregate—the great ebbing and flowing tides of the commercial world—the great gulf streams of traffic which flow round from hemisphere to hemisphere, the mighty tradewinds of commerce which sweep from the old world to the new, that vast aggregate system which embraces the whole family of man, and brings the overflowing treasures of nature and art into kindly relation with human want, convenience and taste.

In carrying on this system, think for a moment of the stupendous agencies that are put in motion. Think for a moment of all the ships that navigate the sea. An old Latin poet, who knew no waters beyond those of the Mediterra-

nean and Levant, says that the man must have had a triple casing of oak and brass about his bosom who first trusted his frail barque on the raging sea. How many thousand of vessels laden by commerce, are at this moment navigating, not the narrow seas frequented by the ancients, but these world-encompassing oceans. Think next of the mountains of brick, and stone, and iron, built up into the great commercial cities of the world; and of all the mighty works of ancient and modern contrivance and structure,—the modes, the lighthouses, the bridges, the canals, the roads, the railways, the depth of mines, the Titanic force of enginery, the delving ploughs, the scythes, the reapers, the looms, the electric telegraphs, the vehicles of all descriptions, which directly or indirectly are employed or put in motion by commerce,—and last, and most important, the millions of human beings that conduct, and regulate, and combine these inanimate, organic, and mechanical forces.

And now, sir, is it any thing less than a liberal profession, which carries a quick intelligence, a prophetic forecast, an industry that never tires: and, more than all, and above all, a stainless probity beyond reproach and beyond suspicion, into this vast and complicated system, and by the blessing of Providence, works out a prosperous result? Such is the vocation of the merchant—the man of business—pursued in many departments of foreign and domestic trade—of finance, of exchange—but all comprehended under the general name of commerce—all concerned in weaving the mighty network of mutually beneficial exchanges which enwraps the world.

I know there is a shade to this bright picture—where among the works or the fortunes of men shall we find one that is all sun-light? Napoleon the First thought he had said enough to disparage England when he had pronounced her a nation of shop-keepers; but we Americans are said by some of our own writers to be slaves of the almighty dollar. But these are sallies of national hostility, or the rebukes which a stern moral sense rightly administers to the besetting sins of individuals or communities. Every pursuit in life, however, has its bright and its dark phase; every pursuit may be followed with a generous spirit for honorable ends, or with a mean, selfish, corrupt spirit, beginning and ending in personal gratification. But this is no more the case with the commercial than any other career. What more difference than the profession of the law, as pursued by the upright counsellor, who spreads the shield of eternal justice over your life and fortune, and the wicked pettifogger who drags you through the thorns and brambles of vexatious litigation? What more different than the beloved physician, the sound of whose soft footstep, as he ascends your stair-case, carries hope and comfort to the couch of weariness and suffering, and the solemn, palavering, impudent quack, who fattens on the fears and frailties of his victims? What more different than the press, which, like the morning sun, sheds light and truth through the land, and the press which daily distils the concentrated venom of personal malice and party detraction from its dripping wings? I believe that the commercial profession is as capable of being pursued with intelligence, honor and public spirit, as any other; and, when so pursued, is as compatible with purity and elevation of character as any other—as well entitled to the honors which a community bestows on those who adorn and serve it—the honors which you this day delight to pay to your friend and guest.

I was not the witness of the commencement of his career abroad; but we all know that it soon fell upon that disastrous period when all American credit
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stood low—when the default of some of the States, and the temporary inability of others to meet their obligations, and the failure of several of our monied institutions, threw doubt and distrust on all American securities. That great sympathetic nerve of the commercial world—credit—as far as the United States were concerned, was for the time paralyzed. At that moment, and it was a trying one, our friend not only stood firm himself, but he was the cause of firmness in others. His judgment commanded respect—his integrity won back the reliance which men had been accustomed to place on American securities. The reproach in which they were all indiscriminately involved was gradually wiped away, from those of a substantial character; and if on this solid basis of unsuspected good faith he reared his own prosperity, let it be remembered that, at the same time, he retrieved the credit of the State of which he was the agent, performing the miracle, if I may so venture to express myself, by which the word of an honest man turns paper into gold.

A course like this, however commendable, might proceed from calculation. If it led to prosperity and opulence it might be pursued from motives exclusively selfish. But Mr. Peabody took a different view of the matter, and immediately began to act upon an old-fashioned New England maxim, which I dare say he learned in childhood and carried with him from Danvers, that influence and property have their duties as well as their privileges, and set himself to work to promote the convenience and enhance the enjoyments of his traveling fellow countrymen,—a numerous and important class. The traveler—often the friendless traveler—stands greatly in need of good offices in a foreign land. Several of you, my friends, know this, I am sure, by experience; some of you can say how perseveringly, how liberally, these good offices were extended by our friend, through a long course of years, to his traveling countrymen. How many days otherwise weary have been winged with cheerful enjoyments through his agency; how many otherwise dull hours in health and in sickness enlivened by his attentions!

It occurred to our friend especially to do that on a large scale, which had hitherto been done to a very limited extent, by our diplomatic representatives abroad. The small salaries and still smaller private means (with a single exception) of our ministers at St. James, had prevented them from extending the rites of hospitality as liberally as they could wish to their fellow-citizens abroad. Our friend happily, with ample means, determined to supply the defect, and brought together at the social board from year to year, at a succession of entertainments equally magnificent and tasteful, hundreds of his own countrymen and of his English friends. How much was done in this way to promote kind feeling and mutual good will, to soften prejudice, to establish a good understanding, in a word, to nurture that generous rivalry inculcated in the sentiment to which you have bid me respond, I need not say. I have been particularly requested by my friend Sir Henry Holland, a gentleman of the highest social and professional standing, to state, while expressing his deep regret that he can not participate in this day's festivities, that he has attended several of Mr. Peabody's international entertainments in London, and felt them to be of the happiest tendency in promoting kind feeling between the two countries.

We are bound as Americans, on this occasion particularly, to remember the very important services rendered by your guest to his countrymen who went to England in 1851, with specimens of the products and arts of this country to be exhibited at the Crystal Palace. In most, perhaps in all other countries,

this exhibition had been made a government affair. Commissioners were appointed by authority to protect the interests of the exhibitors, and what was more important, appropriations of money were made to defray their expenses. No appropriations were made by Congress. Our exhibitors arrived friendless, some of them penniless in the great commercial Babel of the world. They found the portion of the Crystal Palace assigned to our country, unprepared for the specimens of art and industry which they had brought with them; naked and unadorned, by the side of the neighboring arcades and galleries, fitted up with elegance and splendor by the richest governments in Europe. The English press began to launch its too ready sarcasms at the sorry appearance which Brother Jonathan seemed likely to make, and all the exhibitors from this country, and all who felt an interest in their success were disheartened. At this critical moment our friend stepped forward; he did what Congress should have done. By liberal advances on his part, the American department was fitted up; and day after day, as some new product of American ingenuity and taste was added to the list—McCormick's reaper, Colt's revolver, Powers's Greek slave, Hobb's unpickable lock, Hoe's wonderful printing presses, and Bond's more wonderful spring governor—it began to be suspected that Brother Jonathan was not quite so much of a simpleton as had been thought. He had contributed his full share, if not to the splendor, at least to the utilities of the exhibition. In fact, the leading journal at London admitted that England had derived more real benefit from the contributions of the United States than from those of any other country.

Our friend, on that occasion, much as he had done in the way mentioned to promote the interest and success of the American exhibitors, and to enable them to sustain that generous rivalry to which the toast alludes, thought he had not done quite enough for their gratification. Accordingly, in a most generous international banquet, he brought together on the one hand the most prominent of his countrymen, drawn by the occasion to London, and on the other hand, the Chairman of the Royal Commission, with other persons of consideration in England, and his British friends generally: and in a loving cup of old Danvers oak pledged them, on both sides, to warmer feelings of mutual good will, than they had before entertained.

In these ways, Mr. President, our friend has certainly done his share to carry into effect the principle of the toast, to which you call upon me to reply. But it is not wholly nor chiefly for these kindly offices and comprehensive courtesies,—nor for the success with which he has pursued the paths of business life, not for the moral courage with which, at an alarming crisis, and the peril of his own fortunes, he sustained the credit of the state he represented,—it is not these services that have called forth these demonstrations of respect. Your quiet village, my friends, has not gone forth in eager throngs to meet the successful financier; those youthful voices have not been attuned to sing the praises of the prosperous banker. No, it is the fellow citizen who, from the arcades of the London exchange, laid up treasure in the hearts of his countrymen; the true patriot who, amidst the splendors of the old world's capital, said in his heart,—“If I forget thee, oh Jerusalem, let my right hand forget her cunning, if I do not remember thee let my tongue cleave to the roof of my mouth;” it is the dutiful and grateful child and benefactor of old Danvers whom you welcome back to his home.

Yes sir, and the property you have invested in yonder simple edifice, and in

providing the means of innocent occupation for hours of leisure,—of instructing the minds and forming the intellectual character not merely of the generation now rising, but of that which shall take their places, when the heads of these dear children, who now grace the table, shall be as gray as mine, and of others still more distant, who shall plant kind flowers on our graves,—it is the property you have laid up in this investment, which will embalm your name in the blessings of posterity, when granite and marble shall crumble to dust. Moth and rust shall not corrupt it; they might as easily corrupt the pure white portals of the heavenly city, where “every several gate is of one pearl.” Thieves shall not break through and steal it; they might as easily break through the vaulted sky and steal the brightest star in the firmament.

The great sententious poet has eulogized the “Man of Ross,”—the man of practical unostentatious benevolence,—above all the heroes and statesmen of the Augustan Age of England. Who, he asks—

“Who hung with woods the mountain’s sultry brow?
From the dry rock, who bade the waters flow?
Not to the skies in useless columns tost
Or in proud falls magnificently lost,
But clear and artless, pouring through the plain,
Health to the sick, and solace to the swain.”

But your Man of Ross, my friends, has taught a nobler stream to flow, through his native village,—that bubbling, sparkling, mind-refreshing, soul-cheering stream, which renews while it satisfies the generous thirst for knowledge,—that noble, unquenchable, thirst “which from the soul doth spring,”—which gains new eagerness from the draught which allays it, forever returning, though forever slaked, to the cool deep fountains of eternal truth.

You well recollect, my Danvers friends, the 16th of June, 1852, when you assembled to celebrate the centennial anniversary of the separation of Danvers from the parent stock. Your pleasant village arrayed herself that day in her holiday robes. Her resident citizens with one accord took part in the festivities. Her children dispersed through the Union, returned that day to the homestead. One long absent was wanting, whom you would gladly have seen among you. But you had not forgotten him, nor he you. He was beyond the sea, absent in body, but present in spirit and in kindly remembrance. In reply to your invitation, he returned, as the custom is, a letter of acknowledgement, enclosing a sealed paper, with an endorsement setting forth that it contained Mr. Peabody’s sentiment, and was not to be opened till the toasts were proposed at the public dinner. That time arrived,—the paper was opened,—and it contained the following sound and sensible sentiment:—“Education,—A debt due from the present to future generations.”

Now we all know that, on an occasion of this kind, a loose slip of paper, such as a sentiment is apt to be written on is in danger of being lost;—a puff of air is enough to blow it away. Accordingly, just by way of paper-weight: just to keep the sentiment safe on the table; and also to illustrate his view of this new way of paying old debts, Mr. Peabody laid down twenty thousand dollars on the top of his sentiment; and for the sake of still greater security, has since added about as much more. Hence it has come to pass, that this excellent sentiment has sunk deep into the minds of our Danvers friends, and has I suspect, mainly contributed to the honors and pleasures of this day.

But I have occupied, Mr. President, much more than my share of your time;

and on taking my seat, I will only congratulate you on this joyous occasion, as I congratulate our friend and guest at having had it in his power to surround himself with so many smiling faces and warm hearts.

Other sentiments were prepared, and other highly appropriate speeches were made by Mr. Davis, who was Secretary of Legation during Mr. Lawrence's mission to England, by President Walker, and Prof. Felton of Harvard College, by the Mayors of Salem, Cambridge, and Charlestown, and others; but we can only find room for the few remarks of President Walker, in reference to a sentiment complimentary to Harvard College and to an extract from the speech of Mr. Davis.

I desire to return my respectful and grateful acknowledgements for the honorable mention of Harvard College. Having said this, if I consulted my feelings and my discretion, I should sit down; but I consider that I am indebted for the honor of an invitation to be present on this happy occasion, to the circumstance of my connexion with the oldest literary institution in the country; and therefore I cannot be entirely silent when the praises of the Merchant are spoken. Look at our literary institutions throughout the land: it is hardly too much to say, that our colleges, our endowed schools, our public libraries, and our institutes are *what our merchants have made them*. Take away what our Perkinses and our Lawrences have done for us, and we should be compelled to shut up our halls and our lecture-rooms; or rather, we should never have had any halls or lecture-rooms to open. For these reasons, learning (I regret that she has not a better messenger to send here to-day than myself,) for these reasons, learning sends her tribute to this great peaceful celebration, this great moral triumph.

MR. J. B. C. DAVIS, of the city of New York, in his address, said that the merchants of New York would have been happy in an opportunity in their own city to render a tribute of respect and affection to one who had done so much to exalt the name of an American merchant—and who had done so much for American credit in difficult times;—"Especially do we remember, and I have been reminded of it to-day by a New York friend who is present, that at the time when a merchant of New York offered to the United States government the use of a vessel, to proceed to the Arctic seas in search of Sir John Franklin, it was the money of George Peabody that fitted out the *Advance*, and enabled Dr. Kane to make the discoveries which have brought so much honor upon New York, and upon the country."

The contribution by Mr. Peabody of \$10,000 toward the expenses of the outfit, secured the sailing of the second expedition of Dr. Kane, and is commemorated by him, by bestowing the name of Peabody on one of the bays in the Arctic sea. In whatever of honor or success attaches to that enterprise of philanthropy and science, the names of Moses H. Grinnell and George Peabody, should be indissolubly associated together,* with the name of Dr. E. K. Kane.

Truly the RECEPTION throughout was a *great moral triumph*.

* At a recent meeting of the Royal Geographical Society of England, Rear Admiral Beechey presiding, on motion of Sir Roderick Murchison, seconded by Captain Sherard Osborn, it was unanimously voted, that the president should communicate in person to that eminent Arctic Explorer, Dr. Kane, the expression of the sincere regrets of the members that he should be prevented by ill-health from appearing at the meeting to receive the gold Medal of the Society for his arduous and skillful endeavors, under the auspices of Messrs. Grinnell and Peabody, to rescue Sir John Franklin, and the important additions he had made to geographical knowledge.

JOHN KYRLE—THE MAN OF ROSS.

From Pope's *MORAL ESSAYS*—Epistle Third,—addressed to Allen, Lord Bathurst, *On the Use of Riches*.

After discussing in his terse way the point, whether the invention of money had been more beneficial or detrimental to mankind, the Poet draws pictures of various characters, but too well known in his day for their abuse of wealth, and for the shameful end to which they came at last, and then passing a deserved compliment on Lord Bathurst and Lord Oxford, asks :

But all our praises why should lords engross ?
 Rise, honest Muse ! and sing the Man of Ross :
 Pleas'd Vaga echoes through her winding bounds,
 And rapid severn hoarse applause resounds.
 Who hung with woods yon mountain's sultry brow ?
 From the dry rock who bade the water flow ?
 Not to the skies in useless column tost,
 Or in proud falls magnificently lost,
 But clear and artless, pouring through the plain
 Health to the sick and solace to the swain.
 Whose causeway parts the vale with shady rows ?
 Whose seats the weary traveler repose ?
 Who taught that heaven-directed tower to rise ?
 "The Man of Ross," each lisping babe replies.
 Behold the market-place with poor o'erspread,
 The Man of Ross divides the weekly bread :
 He feeds yon almshouse, neat, but void of state,
 Where age and want sits smiling at the gate :
 Him portion'd maids, apprentic'd orphans blest,
 The young who labor the old who rest.
 Is any sick ? the Man of Ross relieves,
 Prescribes, attends, the medicine makes and gives.
 Is there a variance ? enters but his door,
 Balk'd are the courts and contest is no more :
 Despairing quacks with curses fled the place,
 And vile attorneys, now a useless race.
 B. Thrice happy man ! enabled to pursue
 What all so wish, but want the power to do !
 Oh say, what sums that generous hand supply ?
 What mines to swell that boundless charity ?
 P. Of debts and taxes, wife and children clear,
 This man possess'd five hundred pounds a year.
 Blush, grandeur, blush ! proud courts, withdraw your blaze,
 Ye little stars ! hide your diminished rays.
 B. And what ? no monument, inscription, stone,
 His race, his form, his name almost unknown ?
 P. Who builds a church to God and not to fame,
 Will never mark the marble with his name :
 Go, search it there, where to be born and die,
 Of rich and poor makes all the history :
 Enough that virtue fill'd all the space between,
 Prov'd by the ends of being to have been.

THE MAN OF ROSS immortalized in the above lines, was John Kyrle—a native of the parish of Dymock, in Gloucestershire and a descendant of John Hampden. He was born in 1664 and educated at Balliol College, Oxford, and took up his residence soon after in Ross on a small property given him by his father, and which he enlarged by the purchase of an estate on the banks of the Wye—"the Sylvan Wye of Wordsworth" on which Tintern Abbey stands.

The title of "The Man of Ross" was given to him by a country friend, in his lifetime ; and Mr. Kyrle was highly pleased with the appellation, because it "conveyed a

notion of plain honest dealing and unaffected hospitality." The principal addition to his landed property was an estate, called the Cleve, consisting of fields that extend along the left bank of the river, but raised considerably above its level. Along the skirts of these fields, Mr. Kyrle made a public walk, which still bears his name; he planted it with elms, and continued the plantation down the steep sides of the bank, which overhang the graceful, ever-winding Wye. It is to this plantation that Pope alludes in the lines,—

Who hung with woods the mountain's sultry brow ?

Mr. Kyrle's income has been pretty accurately stated at £500 a year. His favorite occupations were building and painting, in which his skill and taste were as freely exerted for the benefit of his friends as on his own improvements; he frequently planned and superintended architectural works, for persons who gladly availed themselves of his skill and taste.

While improving his own property, he added to the beauties of his favorite spot, and freely imparted to his townsmen the advantages which he had provided for the enjoyment of the lovely scenery around him. The churchyard was planted with elms by Kyrle, and a gate was erected by him leading to a field called "The Prospect," from its commanding a noble view of the rich scenery of the Wye. In times when the art of conveying water by pipes, for the accommodation of all the dwellers in a town, was yet in its infancy, a great benefit was conferred on the inhabitants of Ross, by the skill and enterprise of Mr. Kyrle, who made, in this field, an oval basin of considerable extent, lined it with brick, and paved it with stone, and caused the water from the river to be forced into it by an engine, and conveyed by under-ground pipes to the public cocks in the streets. When a more effectual mode of supply was introduced, the use of the fountain was abandoned, and the basin was filled up. This public work is recorded by the poet, in the lines,—

From the dry rock, who bade the waters flow ?
Not to the skies, in useless columns tost,
Or in proud falls magnificently lost :
But clear and artless, pouring through the plain
Health to the sick, and solace to the swain.

The next work noticed by Pope is a causeway, which was constructed through the exertions of Mr. Kyrle, and paid for by a subscription, to which he largely contributed. It crossed the low ground between the town and the bridge, on the high road to Hereford and Monmouth. This causeway has been since extended, and rendered permanent by the Commissioners of Turnpikes, who have converted it into a spacious driving-way, better adapted to the more frequent and rapid journeyings of modern times.

The walk in the Cleavefields above alluded to, was not only beautified with elms, his favorite tree, but seats were placed at intervals, where the "weary traveler" might "repose," or the lover of fine scenery contemplate at his ease, the beauties before him.

The passage which relates to the church of Ross is calculated to convey an erroneous notion of what was actually done by Mr. Kyrle. The line

Who taught that heaven directed spire to rise ?

coupled with another,—

Who builds a church to God, and not to fame ;

has led many to suppose, that the church was built by Kyrle. The facts are these :

The elegant spire which ornaments the landscape from whatever point it be viewed, was at one time in a dangerous state, which Mr. Kyrle's knowledge of architecture led him to discover. A parish meeting was convened at his special motion, and about forty-seven feet of the spire taken down and rebuilt, himself daily inspecting the work and contributing, over and above the assessment, towards its speedy conclusion. The great bell was given by Kyrle, who attended when it was cast at Gloucester, and threw into the melting pot his large own silver tankard, having first drunk his favorite toast of "Church and King."

Behold the market-house, with poor o'erspread,
The Man of Ross divides the weekly bread.

The distribution of the "weekly bread" at the market-house is a circumstance of peculiar interest in the life of Kyrle. The donation of bread was furnished by a grant, renewed by successive lords of the manor, of certain tolls on all corn brought to market. The man of Ross acted as the lord's almoner. Tradition reports, in homely language, that "it would have done one's heart good to see how cheerful the old gentlemen looked, while engaged in the distribution." At length the toll, thus voluntarily transferred to the poor at the will of each succeeding lord, was claimed by the townsmen as their right. The question was referred to the Man of Ross by consent of both parties; and he, preferring truth and justice before popularity and self-gratification, determined, as the evidence compelled him to do, that the toll belonged to the lord. So are pride and covetousness found in communities as well as individuals.

The remaining lines refer to various private acts of charity, for which a man of Kyrle's noble disposition would find frequent opportunities in whatever part of the world he might be placed. The town of Ross could tell of many who, before and since his time, and at this day, clothe the naked, feed the hungry, instruct the ignorant, and teach the infant's tongue to praise the name of Creator and Redeemer.

There is, however, one anecdote of Mr. Kyrle, which we are unwilling to omit, as it exhibits that noble confidence, which none but an honest man can feel or express towards his fellow-man. About a year after the death of the Man of Ross, a tradesman of the town came to the executor, and said privately to him, "Sir, I am come to pay you some money that I owed to the late Mr. Kyrle." The executor declared he could find no entry of it in the accounts. "Why, sir," said the tradesman, "that I am aware of. Mr. Kyrle said to me, when he lent me the money, that he did not think I should be able to repay it in his lifetime, and that it was likely you might want it before I could make it up; and so, said he, I wont have any memorandum of it, besides what I write and give you with it; and do you pay my kinsman when you can; and when you show him this paper, he will see that the money is right, and that he is not to take interest."

The Man of Ross died in 1754, at the advanced age of ninety, a bachelor. At the time of his decease, he owed nothing, and there was no money in his house. He was borne to the grave by his workmen and usual attendants, and amidst the whole population of Ross.

Though he disliked large parties, his house was open to the reception of his friends, in the genuine spirit of old-fashioned English hospitality. "He loved a long evening; enjoyed a merry tale, and always appeared discomposed when 't was time to part." His dishes were generally plain; malt liquor and cider were the only beverages introduced; there was no roast beef except on Christmas-day. At his kitchen fire-place was a large block of wood, for poor people to sit on; and a piece of boiled beef and three pecks of flour, in bread, were given to the poor every Sunday. The Man of Ross was a daily attendant at the service of the parish church. When the chiming of the bells began, all business ceased with him; he washed his hands and proceeded to his pew. When the church was newly pewed, about twenty years after his death, the rector and parishioners resolved that Mr. Kyrle's seat should remain, as it does at this day, in its original condition and style. A handsome tablet, with a bust of the Man of Ross, has long since removed the stigma imputed in the concluding lines of Pope's eulogy of Kyrle.

The Man of Ross, then, it has been seen, was a private gentleman of small fortune, with a talent for architecture, and a taste for what is now termed the picturesque, which he employed in the improvement and adorning of his town and neighborhood. Simple in his manners, he lavished no money on gaudy show or equipage. Faithful to his God, and upright in his dealings with man; intelligent, active, and ingenious; he was confided in as a friend, as an umpire, as a receiver and disposer of the subscriptions of others, whether to be employed in works for the public good, or in relieving the wants of indigence and age.

X. LETTERS TO A YOUNG TEACHER.

BY GIDEON F. THAYER,

Late Principal of Chauncy-Hall School, Boston.

I MAY seem to you to have lingered unnecessarily long in the field of moral preparation for the work you have before you ; but I am, continually, more and more convinced that the highest objects of school education are to be secured by reflecting upon this element in your vocation, and fixing the principles and indicating the plans of action to be adopted when entering on the scene of actual labor.

This letter I propose to devote to the consideration of some miscellaneous points, in pursuance of the idea above suggested ; and, in my next, to take up some one of the subjects of specific school study.

In my September letter, I condemned the course of Mr. Regulus, not only because he lost his self-control, but because he employed sarcasm and irony in his discipline ; and this, too, to a sensitive young girl. These should never be used in school government. They wound the heart of sensibility deeply and permanently. They exasperate the sufferers and their associates, exciting in them a spirit of hostility, which it is hard to allay. And, although, in general, the pupils range themselves on the side of the injured party, there are usually not wanting some among them, who, from envy or other malign feeling, are prone to add their ridicule of the supposed delinquent, to the infliction already imposed ; thus indulging a spirit of malice as mean as it is unchristian.—They are ungenerous. The sufferer is entirely in the power of the master, compelled to endure, without even the privilege of making a reply ; and, consequently, demanding his consideration and forbearance.

Far better is it to treat every one with an excess of tenderness, than that a single delicate spirit should be crushed by a sarcastic expression.

I would not overrate the degree of tender feeling in school children ; it is seldom fairly estimated by those who have not been long familiar with them. It exists naturally in a very imperfect state. With both sexes it is the fruit of cultivation. Girls, being more precocious than boys, exhibit its indications earlier in life, and with more intensity. A large majority of our own sex, during the school age, evince it but rarely, and then in a slight degree.

In the perplexing trials of the school-room, you will sometimes be disposed to plead with your school, that they give you their more constant coöperation in the efforts you are making for order and progress. Your own sensibilities excited, you become pathetic in your appeals. Most of your audience are attentive while you are speaking; some are evidently interested, and you imagine that you have effected a general conversion. You dismiss them,—and the loud laugh and merry shout at your pathos, soon convince you that your effort has been thrown away; at least, on the great mass of your auditors.

It will doubtless shock you, at first, to notice with what unconcern they look upon the most flagrant acts of impropriety in their fellows, as they come up for correction; or their indifference at still more serious ills. The school-house burns down; domestic affliction or personal illness confines the teacher at home. Does the boy weep or manifest any concern? No; he rejoices in a holiday or a vacation that the event confers upon him! The germ of sensibility exists within him; but it is to be developed and cherished, or it will lie dormant, as—left to themselves—do the other faculties and properties of the mind, and every sacrifice will be made on the altar of *selfishness*!

Let not this view of the material on which you will have to act cause you to despond. Study carefully, that you may understand, *boy-nature*. Look upon it calmly, and take courage; remembering that, although, when acting in masses, these embryo men are little affected as you desire them to be, yet that there is not one among them who may not be moved to good issues, if taken apart with you *alone*, and the effort made upon him individually. All the weapons of the boy-nature are at once laid aside, and he yields in dutiful submission.

Boys think it brave to oppose their seniors in public, even when they know them to be in the right; and sometimes the fear of ridicule impels them, in the presence of others, to resist the best impulses of the mind. "*Dare to do right*" is a good motto for every human being, and should be kept constantly before the young.

To "understand boys" was, in the opinion of Dr. Arnold, master of the famous Rugby School, in England, a primary qualification in a teacher, and one on which he placed great stress. It was this—in which he himself excelled—that aided him immensely in the government of his school. He was generous in his treatment of his students, bestowed on them his confidence, and, in doubtful cases, gave them the benefit of the doubt, and thus excited in them a sentiment of magnanimity, which made them his friends and coadjutors. In adopting his example, you may sometimes award a degree of merit not justly due to your pupils; but the balance of good will still be in your favor. If overrated by you, their pride or self-esteem will incite them to an

effort to become all that you suppose them to be ; while a suspicion expressed of low desert will produce the very opposite effect.

The so-called "minor morals" should be ranked by teachers at a higher grade. Among these stands *punctuality*. In this it is important that your practice be positive. Proximate punctuality is no virtue. To be at your post a few minutes after the appointed time, will not meet the claims of duty. John Kingsbury, of Providence, R. I., the present president of the American Institute of Instruction, stated in public, a few years since, that, during the twenty-five years that he had been a teacher, he had never been tardy but once, and then but a single minute. And Mr. Libbey, a veteran teacher at Portland, Me., stated, in reply, that "he could beat that." It is hardly necessary to inquire as to the success of such teachers. Fidelity and exactness like this are a satisfactory guaranty for the quality of the schools. Hundreds of the honored matrons of the city of Roger Williams are the living testimonials to the merit of the school where they and their daughters were educated ; and the universal confidence reposed in the venerated teacher of Portland is evidence enough for his.

Punctuality is a good indicator of habits and character. You may reasonably expect that a man habitually practising it is systematic, orderly, and exact in his business transactions, prompt and upright in his dealings, and just in his various relations with society. It is a fact worthy of note that most of the benefactors of the world, whose history has come down to us, have been remarkable for their observance of this duty.

In your engagement with the school-committee, by whom you are employed, certain hours are appropriated to school instruction. Let no affair, personal to yourself, interfere with the claims of your pupils. Every moment will be needed by them in the various studies they attempt. He who takes school hours for reading his newspaper, carrying on his private correspondence, receiving calls of ceremony, or making arrangements for the evening party, is unjust to his charge, and will inevitably fail of success in his calling, lose the approbation of his employers and of his own mind, if not ensure the execration of the young beings whom he specially defrauds.

Strive to open your school, and close it, at the appointed hours. This will promote punctuality among your scholars, and encourage them to be constant in their attendance. But if any one desires or needs more instruction than the six hours of school-time afford,—although it be "not so nominated in the bond,"—fail not to yield a portion of your own time to the wishes of these ambitious or needy ones. A thousand considerations will arise in your own mind to reward the act, and the good you will thus confer will yield you a richer

than a golden harvest. The man who stands, watch in hand, waiting for the hour of twelve to arrive, and then precipitates his school into the highway, whether a reasonable amount of instruction have been given or not, mainly bent on escaping from the walls of his school-room, can have but a low conception of the duties of his office, and must be wholly destitute of the spirit of the true teacher. Yet such, and not a few, do cumber the school-houses in some of our towns and villages. O, that we might have a general expurgation of them throughout the land, for the benefit of the rising generation, and the honor of the teaching fraternity !

Much depends on first steps. On assuming the position of a school-master, therefore, you should have well determined in your own mind what you propose to aim at and to accomplish—should have your course well defined, both as respects the thing to be done, and the mode of doing it. And, without attempting anything in the way of class instruction, on the morning of presentation to the school, the time would be profitably spent in an address to them, couched in familiar language, but delivered with an easy dignity of manner, in which you would state what you propose to do for them in the continuation of any good course on which they had entered, introducing to them such other subjects as would be interesting and useful, whether concerning the mind, the manners, the morals, or the affections. In unfolding the value of these various departments of their future labor, you would find it advantageous and interesting to them to intersperse your statements with such illustrations as might be in point, which, if graphically given, they would be sure to remember in connection with the subject ; and, at the close, ask them how they like your plan, thus drawing them out, securing their confidence, and preparing them for active coöperation. You would naturally tell them that the term would soon pass away, and that you wished them to make all the improvement of which they were capable, in the time ; that this would be expected by their parents, by the committee, and by you. You would assure them of your friendship, your encouragement, and your assistance ; telling them, at the same time, that yours would be a *working* school, and that their happiness in it, as well as the amount of their attainments, would depend on their diligence, their fidelity, and the temper of mind in which they should come to school from day to day ;—that you would endeavor to be gentle, patient, and kind ; but that it would be very difficult for you to be always so, unless each one should strive to do his duty—to do right ;—that you should require a strict attention to order, and to all the rules of the school ; confident that, without this, there could be no progress, and no comfort in the new relations which had then been formed.

You would, also, insist on regular and constant attendance at the time appointed, showing them not only how much they themselves would lose by absence and tardiness, but how unjust and unkind to their classmates and their teacher it would be, to inflict the loss and labor upon them, which would be the inevitable consequence of their delinquency in these respects.

An address, in some such style as this, would probably secure their attention, excite their zeal, and induce new resolutions to secure your approbation.—Let a recess follow. Give the scholars an opportunity to exchange thoughts on what has been said to them; and, if a favorable impression have been made, this intercourse will confirm and deepen it.

The classification and seating will occupy the remainder of the session, perhaps the whole of the day. No matter — “make haste slowly” is a good maxim. The success of the term will depend mainly on securing a right start. With your best uninterrupted efforts you will be unable, in a school of strangers, to make an unexceptionable organization at first; but, by devoting a reasonable portion of time to the effort, you will have the less to undo.

Tell the scholars that, as soon as you shall have become acquainted with them, you intend to establish a “merit roll,” and that you cherish the hope that all, or with few exceptions, will have a claim to the front rank. Tell them that you want them all to become good scholars, but that your highest approbation will be bestowed on those who are the best boys and girls.

By thus showing them that they all have it in their power to distinguish themselves, whatever their scholarship, you may be able to enlist a large number of allies in your work, which will hence go on all the more prosperously, because adopted cheerfully, or from choice.

You are now ready for the assignment of lessons. If it can be done without confusion, allow the voice of each class to fix their length at first, cautioning them against attempting too much, and notifying them that the amount assigned will be required, when due, thoroughly and perfectly learned. You will thus ascertain how much they can master, and save yourself from the murmurs of discontent so almost sure to arise from the new teacher's first tasks. It is difficult for one familiar with the minds of his pupils, in all cases to adopt judiciously the amount to be acquired at a sitting, by each class; and, where the parties are strangers to each other, impossible. A good rule is, to require too little, rather than too much. When the teacher ascertains by experience what the classes respectively are able to do, he can, of course, modify his requisitions accordingly. The mind should not, on the one hand, be overtasked; nor, on the other, have

so little demanded as to permit it to lie torpid, or prevent a vigorous action. In this, as in most things else, wisdom points to the middle course. Give enough to do to keep the powers bright, but not enough to crush or to burden.

When the lessons have been assigned, question the pupils, to ascertain whether they know how to study; for on this the facility and certainty of acquisition, in a great measure, depend.

If they have had no instruction on the point, show them how. If the lesson is one merely *memoriter*, it should be studied piece-meal—say, to the first period, and then review; to the second, and then a repetition of the first and second; to the third, and a repetition of the first, second, and third,—and so on to the end; by which process the learner holds, as it were by a cog-wheel, all that he gains, instead of attempting too much at once, whereby the new portions learned drive the former out of the memory.

If the question of opening your school in the morning, with religious exercises, be left for you to determine, you will, of course, decide in favor of it. The good effect of it, if judiciously conducted, will be felt through the day, and its influence carried beyond the walls of your school-room. But let me entreat you not to permit the services to be performed in a dull, monotonous tone of voice, as if the whole were a mere lifeless formality. If the heart be in it, the manner will evince the fact, and the children will feel that it involves a solemn reality. If not, it should be omitted altogether;

“ For God abhors the sacrifice
Where not the heart is found ; ”

and your school, instead of receiving benefit, will sustain lasting injury in its religious nature, as well as in its estimate of public religious services.

Be careful, in reading the service,—whether it be in a book prepared for such occasions, or a prayer-book, hymn-book, or the Bible,—to do it with feeling, with appropriate modulation, and all the expression that properly belongs to the sentiments uttered. Why some of the sublimest compositions that have come down to us should be murdered, as they not unfrequently are, by those who attempt to read them in public, it would be impossible to say; but let it not be done in schools, where the art of reading is professedly taught; in fact, where it is the leading department of attention. There, at least, they should be read with propriety and effect.

If you are endowed with *enthusiasm*, you are now prepared to commence your work. This is a property as essential to complete success in teaching, as any belonging to mind. The individual destitute of it,

would do well to devote his powers to some other field of labor. If, however, a degree of it subsists, and a strong faith in its importance, it may be increased by culture. The difference between a school conducted by a person largely imbued with it, and one who possesses little or none, is as the living compared to the dead.

On the return of Horace Mann from his educational tour in Europe, he published, in his Seventh Annual Report to the Board of Education of Massachusetts, the result of his observations ; and nothing was more striking than the disparity he pointed out between the Prussian schools and those of our own country, in respect to this element of power over the young. And although, it must be confessed, there seemed to be an excess of it, as it was said to be applied to the teaching and management of the Prussian schools, yet I have ever thought that an infusion of the same spirit into our American modes of educating our children, might well be considered as an improvement of very great value.

Enthusiasm in the teacher gives vitality to whatever he says or does in presence of the school ; while a heavy, slow, phlegmatic temperament puts to sleep even the animation of childhood, and crushes its buoyancy as with a leaden weight.

I am well aware that a state of unceasing excitement is healthful neither to the body nor the mind ; that both would soon sink under it ; that teacher and taught would become its victims. I do not, therefore, plead for this. I ask only for the presence of this great principle in the man, to be used as a just discretion may dictate.

Ebenezer Bailey,* a man who stood in the very front rank of good teachers, in the city of Boston, a quarter of a century ago, wrought wonders with a large school of young ladies, taught by him for several years, through the instrumentality of this power. Scarcely did the Prussian mode of recitation and of drill, as related by Mr. Mann, exceed what might with truth be said of Mr. Bailey's school. The latter had not the violence, the almost fierceness of manner, witnessed in the Prussian schools ; but for earnestness, for intensity of thought, and breathlessness of action,—nothing feminine in the human form could go beyond them.

* Mr. Bailey had been very successful in the public service, before the establishment of his private school ; first, as principal of the reading department of the South school, and subsequently as that of the high school for girls. This latter excellent and very popular school, having been abolished in the mayoralty of the elder Quincy, on principles of a very anti-republican character, Mr. Bailey wrote an able pamphlet, addressed to the mayor, denouncing the measure in scorching terms. And when he, soon after, proposed opening a school of a

He would arrange a class of ten or twelve around a black-board, and, writing a problem on it, would put them upon their speed in its solution. Each, with slate in hand, would begin, the moment she had caught the idea, to solve it, the object being to obtain the answer in the shortest time. She that succeeded first called out *one*, the next, *two*, and so on to the last. This fixed their relative rank. The classes were usually well matched ; and, as the excitement was continued but for a short period at a lesson, it was one of the most interesting exhibitions of an intellectual race that can well be imagined. The rapidity with which the calculations were made, and the figures marked upon the slates by the several competitors, memory even almost refuses to declare. Suffice it to say, that one might travel far, and examine many schools, without finding a parallel in these respects. And this example is given as illustrative of the operation of this quality in the hands of a skilful teacher.

It is not my intention to assert that there are now no schools equal to Mr. Bailey's. This would be untrue ; but I wish to keep before the mind of the young teacher the important fact, that the pledge of success in school-keeping is a well-directed enthusiasm, which this school so well illustrated.

It would be impossible thus to influence a whole school, especially of both sexes, of the diversity of ages that attend most of our public seminaries. Nor is it desirable to do it with the same scholars habitually ; but he who is able thus to bring out all of mental capacity that a class possesses, has his pupils in his hand, as it were, and may mould them as the potter moulds the clay.

Some school exercises are better adapted than others to secure such entire absorption of the attention ; but the enthusiastic teacher will never want for expedients to elicit the ardor of the young, and turn it to the best account.

I shall make no apology for having entered into these details ; for I am confident they are what the young members of our fraternity want. To the teacher of experience they are not addressed : he is supposed to be among those who have "already attained."

similar character, on his own account, large numbers availed themselves of the advantage of joining it ; and his annual catalogue, for 1829, gives the names of one hundred and sixty-eight pupils connected with it.

He was a thoroughly educated man, of fine taste and just discrimination. His work on Algebra, his Young Ladies' Class Book, and several poems of merit, evince the strength and versatility of his genius. He was one of the leading founders of the American Institute of Instruction, to which he devoted much time, thought, and labor.

XL—NORWICH FREE ACADEMY.

WITH AN ACCOUNT OF RECENT SCHOOL MOVEMENTS IN NORWICH, CONN.

THE endowment of a FREE ACADEMY in the town of Norwich, Connecticut, by a few large hearted men, as part of the system of public instruction, is a remarkable example of liberality to the cause of education and science, which we take pleasure in recording. The building erected for the accommodation of the school, the range of studies contemplated, the permanence and liberality of the endowment, and the history of the educational movement which ended in the present organization of the schools of Norwich, are matters of such general interest, that we have asked the privilege of publishing the Address of the Rev. J. P. Gulliver, with the other proceedings, at the recent inauguration of the institution. As an appropriate introduction; and summary of the whole movement we copy the following article from the Appendix to the Annual Report of the Superintendent of Common Schools in Connecticut for 1856.

Movements were commenced about twenty years since, for a re-organization of the public schools of the Second School Society of Norwich. The usual opposition originated by a few narrow-minded tax-payers, and fanned into life by ambitious demagogues, was arrayed against the measure, and it was finally defeated. The whole community had, however, been agitated with the subject, and much good seed had been sown, which has since borne beautiful fruit. For ten years the citizens of Norwich made the best they could of a set of disjointed schools, thrown together with scarcely any attempt at gradation, governed by six independent districts, and some forty school officers, and supported entirely without taxation. Good men labored hard; but almost in vain, to secure for the people, under the existing system, good schools.

An effort was then made, with still greater earnestness, to improve the schools, without any attempt at re-organization. They were regularly visited. A monthly meeting of the visitors was held, at which the condition of each school was minutely reported. Every possible effort was made to elevate the schools. The success was, however, but partial. After a trial of two years, the gentlemen, whose valuable time had been given to the effort, came unanimously to the conclusion, that without a consolidation of at least the more central school districts, and the thorough grading of the schools, and the taxation of property for the support of schools, this labor would be thrown away. The board, accordingly laid before the school society a proposition for inaugurating such a change. This was the signal for a storm! A few (but only a few) of the heavy tax-payers were the first to smelt treason. They passed the word to a set of men, who flourish in their own esteem, by exhibiting their powers in thwarting what others attempt to do. The usual cry was raised, 'a school for the rich!' The prejudices of poor men were appealed to. This very class, who were to be most benefitted by the change, were excited to oppose it. Men who had been paying rate bills for years, clamored against the proposition to sup-

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port schools by taxing property. Parents, who had bitterly complained that their children could not be as well educated as those of the wealthy, refused to accept a plan which was to bring the highest order of schools within their reach, at a mere nominal expense. The intelligent portion of the community were, however, thoroughly aroused. Meeting after meeting was held. Crowds attended and listened to the discussions. Light was rapidly diffused. The opposition became desperate. All manner of offensive personalities were made use of to intimidate those who were inclined to be champions of the good cause. Still, it was apparent, by incidental votes, that a large and an increasing majority were in favor of the proposed change. This majority, however, forbore to press the question to a decisive vote. They publicly avowed their intention to postpone final action, until the whole community should have fully examined the question, and arrived at an intelligent decision upon it. This concession was taken advantage of. At an adjourned meeting, where it was generally understood no decisive action was to take place, the opposition collected a large force, very many of whom were not legal voters, and, in the absence of the great body of the friends of the measure, voted the indefinite postponement of the whole subject. No sooner had this been accomplished, than a general regret was expressed at the result, even among those who had boisterously aided in the movement. Many declared, that had they expected to succeed, they would not have opposed the measure. Their leaders, instead of receiving the coveted meed of applause from their followers, for the victory, were overwhelmed with reproaches. In these circumstances, the friends of reform judged it wise to cease all further agitation of the subject, and to leave the responsibility of the consequences upon those who had chosen to assume it. The administration of the schools was accordingly left in their hands. They appointed such officers as they chose, and no attempt was made in any form, for two years, to interfere with their wishes. During this time, the schools sunk to a lower level than ever. Even the most ignorant and prejudiced could not fail to see and feel the evil. The attendance constantly diminished, until it was ascertained that only about one-third of the children, between the ages of four and sixteen, attended school at all. The feeling of the community on the subject was becoming intense. The attention of the people having been so thoroughly aroused by previous discussion, every defect was seen as in a focal light. Those who had been distinguished as the leaders in the effort to defeat the proposed reforms, found themselves in a most uncomfortable position. They were daily reproached as the authors of all the mischief. The first fruit of this ripened public sentiment, was a movement for the endowment of a free high school. Every attempt to improve the lower schools, had been met by the cry, "You want a high school! You want a school for the rich, and mean to tax the poor to pay for it!" Some thirty-five individuals accordingly determined that they would unite and establish a high school and endow it, which should be open, free of all charge, to all classes. This effort was successful, some eighty-five thousand dollars having been subscribed for that purpose. It was generally understood that as soon as this subscription was complete, a new appeal was to be made to the school society to acknowledge this magnificent donation, by re-organizing their lower schools on the plan previously rejected. Before this plan could be carried out, it was ascertained that the leaders in the former opposition were moving in the same direction, and were about to propose the same thing! Most gladly the friends of reform left the business in their hands. The result was, that a consolidation of the two central districts of the city was effected, a vote was passed, *unanimously*, to purchase one of the most valuable lots in the city, and to erect the noble structure, a representation of which is here given.* Soon after, the provisions of the new school law were accepted, a Board of Education was appointed, the ablest teachers were engaged at liberal salaries, a perfect gradation of schools established, and every provision made for the institution of the very best system of public education. When the Free Academy shall go into operation, Norwich will undoubtedly be furnished with public schools, equal, if not superior, to those of any city in the land, not excepting Boston and its neighboring municipalities. This history shows what can be accomplished, in the face of the most powerful opposition, by determination, pa-

*See Plans of Central District School-house: p. 698.

tience and perseverance. It especially shows that defeat is often essential to victory. The feeling excited, and the interest awakened by these repeated defeats, have secured these glorious ends. It should be added, that the citizens of Norwich are justly proud of their schools, and that the expenditure they occasion is most cheerfully borne, without the slightest show of opposition.

As an important part of the history of this movement, we publish a Circular, addressed to a few of the wealthiest citizens of Norwich, which seconded by the unwearied personal efforts of the author, the Rev. J. P. Gulliver, originated and gave direction to the efforts which ended in the establishment and endowment of the Free Academy. After setting forth the condition of the schools and of education in Norwich, the author remarks :

Such are some of the leading *facts* in the case. The inquiry now arises—*In what way may these evils be most readily removed?*

Will you allow me to suggest, very briefly, some considerations which go to show that the establishment of a HIGH SCHOOL, on an independent basis and on a liberal scale, will more directly and surely effect the object in view than any other measure we can adopt.

Such a school is of course necessary to secure instruction in the higher branches of study, for which we have almost no provision now.

It is necessary to introduce system and gradation into the lower schools. There must be a standard to grade by—a unit to measure with. The qualifications required for entering the High School will furnish such a standard. Those who control the High School can raise the standard as rapidly as the improvement in the lower schools will allow. Thus gradually and almost insensibly all the schools in the city will be elevated. * *

This inciting influence will be felt also by parents, committees, and districts. No district will be willing to be deprived of the privileges of the High School on account of the inferiority of its own schools. The reputation of grammar school teachers will depend on the number of scholars they get into the High School. This will raise the standard in the grammar school. The reputation of the Primary school teachers will depend on their success in qualifying their scholars for the improved grammar school. The committees in charge of each school will sympathize with the teachers and pupils. The parents will soon become interested. No district will wish to be left behind in the honorable competition. A new life will thus be infused into all our schools. A new standard will gradually be adopted in all our districts. Interest and activity will take the place of apathy and indifference.

This seems to my own mind the readiest and surest way of reforming our whole school system. By means of a High School we can lead where we could never force. We can gently allure those upon whom our arguments and remonstrances will have no effect.

A board of enlightened men in charge of a High School could in fact, without seeming to do so, control the schools of the whole city. Gradually, but surely we should see them elevated in their character, enlarged in their accommodations, deepening in interest, and extending on every side their benign and elevating influences.

The next inquiry that claims our consideration is—*How shall a Free High School be established and sustained?*

There are but two ways:—

1. It may be established and controlled by the School Society.*
2. It may be endowed by private munificence and managed by a board of Trustees selected by the founders.

The first is the ordinary method, and is in a good measure successful under the Massachusetts and Rhode Island laws, which authorize town and city governments to establish and control the schools, without recourse to a popular vote. † But under the Connecticut law there are many difficulties.

1. There is always great difficulty in getting a vote for the *establishment* of such institutions. There are in every community many, whose passions and prejudices can be easily aroused on such a subject. They are suspicious of those whom they term the aristocracy. They fear that some cunning plan is on foot to trample upon the people. They think that in some way they are to be deprived of their hard earnings for the benefit of the rich. No one can have forgotten the scenes through which we have passed in this city in discussing this subject. It would be difficult to tempt our citizens to engage in such a contest again. And even if they should, success would be very doubtful. What a noble vindication would the course now proposed furnish, of the disinterestedness and magnanimity of their motives in previous efforts!

2. To give to the mass of our voters any proper conception of the high character of such a school as we need, and to secure suitable *appropriations* for it, may safely be set down as an impossibility. We need a school that shall give to young ladies the best possible education in *every department*,—an education that shall fit them for any station in life. We need a school that shall train our young men in classical, mathematical, and scientific study, so that they be fitted for college or any department of business life. We ought to remove the necessity of sending our children out of town in order to obtain an education. But who will undertake to make the men, that assemble in our Town Hall, comprehend or appreciate a plan like this?

3. The *management* of the school must be, on this plan, in the hands of the School Society.

What an opportunity would this furnish for the designing to ply their arts!

What an opportunity for every passionate man whose feelings may have been disturbed by the administration of wholesome law, to work fatal injury to such a school! How many friends of rejected applicants for admission would yearly be added to the discontented mass!

Beside how little do large numbers of the voters in this city, or any other, know about the proper management of a High School. They have never attended one; they have never seen one in practical operation. Most of these men know more about a Bank, or an Insurance Company, or a Manufacturing Company, than about a High School. But how much would the stock of such a company be worth if its concerns were left under the control of such an assembly as is collected in one of our School meetings?

The great danger would be that an institution, of the high order which we contemplate, would be so stinted in its commencement, or so mismanaged afterward as to prove a failure.

* The School Societies were abolished by the Legislature in 1856, and the old Town Organization substituted in their place.

† This is not universally the case.

The other method of establishing the school is by private endowment. The plan would be to raise a sufficient sum to purchase land, to erect the building, and to establish a fund sufficient to keep the building in repair, purchase fuel, &c.; and also to raise a fund, the income of which shall be sufficient to secure the services of as able and accomplished a corps of teachers as the country affords.

The advantages of this plan would be as follows:

1. It would secure for the city through all time, a school of the highest character. No private school or "boarding school," however expensive, could possibly give to our sons or daughters, advantages equal to those offered by an institution thus established and controlled. This proceeds on the supposition that it shall be liberally endowed. Tens of thousands have often been almost thrown away in the half-endowment of institutions which have never, on that account, secured any important results.

2. It would secure also a complete system of Grammar, Intermediate and Primary schools of a high order. This I trust has already been shown, and it appears to be one of the grandest results of the enterprise.

3. It would place not only the High School, but all our schools under the actual control of a board of enlightened men, who in their responsible position would make the science of education a study, and thus direct the whole system on the best principles.

4. It would secure for our children, at their home, an education of the highest order. If only a small portion of the money which has been spent by our citizens for twenty years past, or which must be spent for twenty years to come, for inferior advantages in distant schools, were devoted to the endowment of this school, an ample sum would at once be secured. The plan we are now pursuing is the most uneconomical, as well as the most unsatisfactory, possible.

5. It will secure our children, more effectually than any other plan, from contact with children of vulgar manners and vicious habits. This will seem to many, a singular assertion in respect to a public free school. Yet this is the teaching of experience. Daniel Webster was in the habit of declaring very emphatically his preference of well regulated public schools in this respect to any private schools. The Principal of the High School in Worcester, after calling my attention to the remarkably gentlemanly and lady-like manners of the scholars, during the time of recess, remarked: "we find that the thorough education required of those who enter this school is the best guarantee of refinement of manners and delicacy of feeling." I listened to a recitation in Virgil from two boys, one a son of one of the most distinguished men in Massachusetts, and the other the son of an Irish laborer in his employment. It was impossible to discover any difference in dress or demeanor, only that the Irish boy seemed rather the better scholar of the two. Vice and vulgarity are confined to no class in society. But education is always refining and purifying in its tendency. In a private school the vicious and the vulgar often can not be dealt with as they deserve. But an institution like this would be so independent and so strong, that it could expel at once any injurious character, before he could infect his fellows.

6. This plan if carried out, will doubtless contribute greatly to the growth and prosperity of our city.

I have letters from prominent gentlemen both in Hartford and Providence, stating it to be the general opinion of intelligent men, that the recent impulse given to business in those places and the great rise in real estate "is to be

dated from," says one, is "mainly to be ascribed to," says another, "the establishment of an improved system of schools." And this is the uniform testimony which comes from these cities. It is well known that a large number have left our city, and many have been deterred from coming here, on account of our defective system of schools. What enterprise could be more beneficent and at the same time more remunerative than the one now proposed? "There is that scattereth and yet increaseth, there is that withholdeth more than is meet, but it *tendeth to poverty.*"

7. We have the testimony of experience in favor of this plan of private endowment.

The Putnam Free School of Newburyport, Mass., was endowed by Oliver Putnam, Esq., of Newbury. The building and land cost \$26,000. The fund for the support of teachers is \$50,000. The object of the founder was to raise the standard, especially of Common School Education. I am informed that the effect has been truly wonderful.

The plan then, which is now proposed, is the establishment, by private endowment, of a Classical and English Free Academy of the highest order. [Here follows the plan since realized.]

The plan now presented is designed to secure all the educational facilities which are needed to meet the wants of this entire community *for all time*. It is designed to reach and benefit every class in society. It is designed to elevate and perfect schools of every grade. It is designed to accomplish by associated effort, what individuals can secure for themselves and their children, only by great pains-taking and expenditure. It proceeds on the principle that the true wealth of a nation is the cultivated talent of its citizens. It will seek out genius, whenever it is to be found, and will educate it for the common weal. If there be any here, in any of the walks of life, who are fitted to become the future Fultons, and Whitneys, and Websters, and Washingtons of our land—it will awaken and develop their dormant power. Franklin owed all he was, and his country owed all he did for her, to the public schools of Boston. There may be Franklins here, and even those greater than he. Is not a plan thus comprehensive, more truly economical, than one half as costly, but fitted to secure only a tithe of its benefits? In asking you to lend an aid to this enterprise, commensurate with the interests involved, the inducement can be decidedly held out that you will do a permanent work, a thorough work, a patriotic work, an economical work, a work which will be pecuniarily remunerative in its influence upon the prosperity of the city, a work for your children and for your children's children, a work for all the generations that are to succeed each other upon this soil, a work for which each of these generations shall successively bless you, a work upon which God shall smile, and which will be a source of the purest satisfaction to your own mind through all your remaining years on earth.

Asking your pardon for the great length of this communication, which I have found myself quite unable to compress within narrower limits, and begging that these suggestions may receive your early and careful consideration, I remain.

Yours, very respectfully,

JOHN P. GULLIVER.

It is not often the privilege of the projector of such an enterprise to be called on to inaugurate the institution as Mr. Gulliver was—and to perform the pleasing duty as Mr. Gulliver did, on the 21st of October, 1856.

EXERCISES AT THE DEDICATION OF THE FREE ACADEMY,

On Tuesday, October 21st, 1856.

PRAYER by Rev. Alvah Bond, D. D.

SELECTIONS from the Scriptures by Rev. William F. Morgan.

STANZAS written by Mrs. L. H. Sigourney for the occasion.

There's many kinds of stock, they say,
That tempt the speculators ;
But what is safest held, and best,
Might tax the shrewdest natures.
Sage Franklin said, in earlier days,—
And now the wisest bless him,—
"Who pours his purse into his brains,
No man can dispossess him."

And so, the people of my love
His theory have tested,
And for their children and themselves
A glorious sum invested,—
And by this dome, for knowledge rear'd,
Which no dark mortgage fetters,
Have nobly made a race unborn
Their everlasting debtors.

And as in old, historic times,
Though exiled or unnoted,
The Roman citizen with pride
His honor'd birth-place quoted :
So I, with quickened heart this day,
Warm orisons addressing,
Ask, for these native rocks and dales,
Our Father's richest blessing.

ACT OF INCORPORATION.

Upon the petition of Russell Hubbard and others of Norwich, county of New London, praying for an act of incorporation for a free Academy, in said town of Norwich, as per petition on file, dated May 5th, 1854 :

Resolved by this Assembly, That Russell Hubbard, William P. Greene, William A. Buckingham, William Williams, Henry B. Norton, John Breed, Caleb B. Rogers, William W. Coit, James L. Greene, Daniel Tyler, Samuel C. Morgan, Israel M. Buckingham, Lafayette S. Foster, David Smith, John F. Slater, Charles Osgood, Erastus Williams, Lorenzo Blackstone, John A. Rockwell, Leonard Ballou, Charles J. Stedman, John P. Gulliver, Charles N. Farnham, Edward O. Abbott, Charles Tracy, Albert H. Almy, Lucius W. Carroll, Jedediah Spaulding, Stephen W. Meech, Jeremiah S. Webb, Henry Thomas, Christopher C. Brand, Charles Johnson, Ebenezer Larned, Jr.,

Elisha Edwards, Andrew J. Currier, and their successors, be, and they hereby are constituted a body corporate and politic, by the name of "The Norwich Free Academy," and by that name shall have perpetual succession, and be capable in law to purchase, receive, hold and convey all kinds of property requisite and convenient for the purposes of a school; to sue and be sued; defend and be defended, in all courts and places whatsoever; may have a common seal, and change and alter the same at their discretion; appoint proper officers and agents; elect residents of said town of Norwich, to fill the vacancies occurring in their number by death, resignation, or removal from said town, so that hereafter the number of said corporators shall be maintained at twenty-five, when from any of these causes it shall be reduced below that number; and make such regulations, rules and by-laws, as they shall deem expedient, to carry out the objects of the corporation, not inconsistent with the laws of this State or of the United States.

Provided always, that this resolve may be altered, amended, or repealed by the General Assembly.

RESOLUTION inviting the Rev. John P. Gulliver to prepare and deliver an Address on the opening of the Free Academy, in which the history of schools and education in the Town of Norwich should be given, and the designs of the founders of this Institution should be set forth for the information of the public, and the guidance of those who shall be entrusted with its future management.

ADDRESS BY REV. JOHN P. GULLIVER.

HYMN.

Let children hear the mighty deeds,
Which God perform'd of old,
Which in our younger years we saw,
And which our fathers told.

He bids us make his glories known;
His works of power and grace;
And we'll convey his wonders down
Thro' every rising race.

Our lips shall tell them to our sons,
And they again to theirs,
That generations yet unborn
May teach them to their heirs.

Thus shall they learn in God alone
Their hope securely stands,
That they may ne'er forget his works,
But practice his commands.

REMARKS by President Woolsey, of Yale College; Dr. Wayland, late President of Brown University; President Goodwin, of Trinity College; President Smith, of Wesleyan University; Professor Hooker and Professor Noah Porter, of Yale College, and Hon. Henry Barnard, of Hartford.

DOXOLOGY.

[The Remarks will be published in the Journal for March, 1857.]

ADDRESS BY REV. JOHN P. GULLIVER, AT THE DEDICATION OF
THE NORWICH FREE ACADEMY.

WE have assembled to dedicate a costly and noble structure to the cause of education. It is an occasion which might very pardonably be employed in congratulation and rejoicing. Whether we look upon this beautiful territory, consecrated to the uses of learning, or upon this ample building, of whose halls fair science is henceforth to be sole mistress, or upon this great endowment—a legacy from the present to all succeeding generations,—or upon those other generous gifts, which are to station in our cabinets an elegant philosophical apparatus, and to cover these walls with the works of the learned and the great of all ages, we see, on every hand, the gathering materials for a magnificent enterprise, whose successful beginnings and prospective results, no enlarged mind can contemplate without a thrill of exultation and delight. Such comprehensive plans, with so generous an execution of them, make us think better of human nature. They inspire hope for the future of our country and the world. They deepen the conviction that there is a God on high who is steadily advancing the race to dignity, purity and peace.

Yet we feel no disposition to hold a jubilee over what has been accomplished. We celebrate to-day not an achievement but a beginning. The collecting of these material resources is but a small part of the work we have to do. We have now to commence our *spiritual* building. We have to provide an endowment of learning, and of skill and of genius. We have to mark out a territory of science around which we shall lay our curriculum of study. We have to devise an apparatus which shall move responsive to the laws of thought. We have not merely to place libraries upon our shelves, but to store minds with ideas, logically placed and delicately wrought, to be an ornament and a treasure forever.

We do not conceal from ourselves that here is a great labor. To conceive correctly, and to image forth to the thoughts, the ideal of such an enterprise, is a work demanding a gifted intellect,

a large learning and ample experience in the science of teaching. To realize the ideal will be the labor of many long years. It will require patience, talent, scholarship, great steadiness of management, and great determination of purpose. It can only be reached by gradual approximations. It will demand the united action of patrons, and trustees, and teachers, and scholars, and parents.

Our eye then to day is upon the future rather than upon the past. The emotion of anxiety overcomes that of exultation. And we have gathered these wise and learned men about us, we have summoned this intelligent assemblage of our fellow-citizens, to consult upon this great problem and to obtain their aid in fixing the boundaries of our institution, in determining its place among the sisterhood of schools, and in laying down the general principles which should govern its administration.

As you have learned from the resolutions read in your hearing, I speak to-day in the name of the founders of the Institution. So far as any fixed views are now advanced in regard to the aim and plan of the school, they should be regarded as an exposition of the wishes of those who have established it, having been approved by their formal vote.* They desire in this manner to place in the archives of the Academy a full exposition of their plans, for the information and guidance of those who shall succeed to its management.

Following the order laid down in the resolution which is to be my guide, I will attempt to unfold the designs of the founders of the NORWICH FREE ACADEMY, by a historical review of the circumstances in which it had its origin, and afterward by a more direct discussion of the nature and aim of the enterprise.

The first settlers of Norwich, like all the early colonists of New England, regarded schools for their children, one of the prime necessities of the social state. As soon as a few scattered cabins had been erected on the banks of the Yantic and even before the war-whoop of the contending Mohegans and Narragansetts had ceased to echo along its banks, we find the schoolmaster abroad in the infant settlement. Mr. John Birchard has the honor of heading the worthy train of Norwich teachers, receiving in return for nine months' service in the year, £26, provision pay. This substantial remuneration, which doubtless brought more potatoes to his cellar and corn to his crib, than ten times that amount would do at present, was supplied by a contribution of 9s. from

* For the historical matter the author alone is responsible.

each scholar, the town making up the deficit. The next mention of school matters upon the town records bears date 1678, when it was voted that "Mr. Dan'l Mason should be improved as a school-master for nine months"—the meaning probably being, not that the town should improve Mr. Mason, but that Mr. Mason should improve the town. Two years afterwards, in 1680, the first formal town meeting was held for the special purpose of establishing a town school, at which the whole matter was left in the hands of the selectmen, with the following strict injunctions. They should see "1. That parents send their children. 2. That they pay their just proportion. 3. That they take care that the parents be not oppressed, espeshally such as are disabled. 4. That any additional expenses is a charge to the town and to be gathered as any other rates. 5. Whatever else is necessary to a prudent carrying through this occation, is committed to the discreshon of y^e ad select men." *

In 1787 an endowed free Grammar School went into operation, which was established by a legacy of £500 from Dr. Daniel Lathrop. Dr. L. is distinguished as having been, in partnership with his brother Joshua Lathrop, for a long time the only Druggist in the State of Connecticut, in which business he rapidly amassed a fortune, gaining meanwhile the highest regard of his fellow-citizens for his far-reaching views and large generosity. Could that fund of £500 have been preserved in accordance with the wishes of the donor, and made the nucleus of other donations as liberal for the times as his, what magnificent results might have been rolled up during the seventy years which have succeeded! Owing to restrictions in the will, providing that the school should be kept eleven months in the year and eight hours each day, the town was at last obliged to relinquish the legacy and to forego the benefits of the large and flourishing school, which, for many years, was supported by it. Yet the design and the deed are none the less praiseworthy. The name of one who at that early period so fully comprehended the importance of free schools of a superior order, and who so liberally provided for them, should be mentioned with high honor upon our educational annals. Mr. William Baldwin was a distinguished teacher in this school. Among his pupils were the Rev. Dr. Nevins, of Baltimore, the Hon. Jabez Huntington and the Hon. Henry Strong, of Norwich, Gardner and

* History of Norwich, by Miss Caulkins.

Samuel Howland, of New York, the projectors and principal proprietors of the Panama R. R.; together with several of the elder among the patrons of this Institution. The pupils educated in the endowed school of 1787 have been among the leading projectors of the endowed school of 1856! From this center let similar influences go forth, and let the circle widen forever!

In 1690 the records inform us—"The Town orders a Public School: 4*d.* a scholar to be paid by the parent or master and the balance to be raised by the Townsmen by supply rates." In 1700 and in 1701, school-houses were ordered to be built at the expense of the town. Taxes for the support of schools, as well as for the erection of school-houses, are, it will be observed, no new thing in Norwich.

About these days flourished a noted teacher,—Miss Sally Smith,—of whom many striking reminiscences are preserved among the grey-headed boys and girls among us. Miss Sally taught no less than three generations of trembling pupils, confining her instructions chiefly to the mysteries of English spelling. She was greatly distinguished for her success in this department and still more for her uncommon faith in the wisdom of Solomon. The legends still current among us of this lady's severity with the rod are quite astounding. They correspond, unfortunately, with the usual reminiscences of the school-teachers of those days. After all her usefulness, she died at last unhonored, but not forgotten, within the walls of the poor-house,—a warning to all who attempt to control the warm impulses of childhood by *no other power* than the iron rule of mere brute force. The times, however, should have borne the reproach rather than the teacher. From the year 1795 and onward, the Rev. Wm. Woodbridge, the father of the Geographer, kept a boys and girls school in the house now occupied by Gen. Williams. To quote again from the history of Miss Caulkins, "The exhibitions of this school were deemed splendid, and great was the applause when Miss Mary Huntington came upon the stage, dressed in green silk brocade, a crown glittering with jewels encircling her brows, and reading Plato, to personate Lady Jane Grey, while young Putnam, the son of the old General, advanced with nodding plumes to express his tender anxieties for her in the person of Lord Guilford Dudley."

That the schools of Norwich during the last century repaid well the care and money devoted to them is evident from the fact that they furnished to the country five Presidents of Colleges, among

whom we find the distinguished names of Fitch, the Founder and President of Williams; Backus, President of Hamilton; Kirkland, President of Harvard; and Wheelock, President of Dartmouth. The names of numerous prominent civilians and military men might be added to this list. The name of President Nott, of Union, should perhaps also be mentioned, since he received his early education within the limits of the ancient town, under the direction of his brother, who often boasted that he had taught the distinguished orator all the elocution he ever learned, in the corner of one of the home-lots of the Franklin Glebe.

In 1807 a Boys' School was established in the building now standing upon the Little Plain, by Capt. Charles Rockwell, Dr. Dwight Ripley, Major Joshua Perkins, and others. This was called "The Chelsea Grammar School;" was designed chiefly for classical study. Its first teacher was Dr. Jonathan Knight, of New Haven. Hon. Jonathan Barnes, of Middletown, Mr. Roswell C. Smith, the writer of school-books, Rev. Dr. Bushnell, of Hartford, Rev. Dr. William Adams, of New York, and Mr. Wyllys Warner, of New Haven, were among the teachers in this school. This school was, in later years, revived under the auspices of Mr. Charles W. Rockwell, the son of its early patron, and the building now standing upon the spot was erected by subscription. Many of the present citizens of Norwich received their early education in the "Chelsea Grammar School."

In 1812 Miss Lydia Maria Huntley, (now Mrs. Sigourney,) of whom her native town is justly proud, as a scholar trained in Norwich Schools, and Miss Nancy Maria Hyde, established a Female Seminary in the house now occupied by Mr. Edwin Gavitt, on the opposite side of the Little Plain, which flourished for some years. A school known as "The Proprietors' School," was also an institution of importance. The building stood on the east side of the Town Hall, and has since been converted into a stable.

In the year 1815 a change took place in the organization of the public schools. Upon the settlement of the parishes of Lisbon, Franklin and Bozrah, the whole control of the schools had passed, by law, from the town, to the ecclesiastical societies therein established, and at the above date these societies were again sub-divided into nearly forty school districts. The evil influence of these numerous independent jurisdictions was felt during all this period and is felt more and more as the country becomes more densely populated. Private schools were at the same time numerous, as

they must be when public schools decline. Among these may be mentioned the school for young ladies, kept in the building now occupied by the City Post Office, by the distinguished Dr. Jedidiah Morse, the author of the "American Universal Geography," to whom we are indebted for no small portion of the culture and intelligence which have characterized the mothers of the present generation of scholars among us.

In the year 1827 a proposal was made by Mr. W. P. Greene, Mr. W. C. Gilman, and others, to establish an Academy in Norwich on the joint stock principle, with a capital of \$3,000. The shares were readily taken, but there being a difference of opinion as to the location, the enterprise was at last abandoned. Soon after, Mr. Thomas Robinson selected the lot near the Town Hall, where the building stands which was recently occupied as a boys' school, for a Female Seminary. After drawing a plan of the proposed building, he obtained subscriptions to the stock, and secured the erection of the "Norwich Female Academy." Many of the subscribers to the last named project, united in this.

In 1838, the Legislature commenced a new era in the history of common schools in Connecticut, by an act to provide for the better supervision of these schools, by the appointment of a Board of Commissioners of Common Schools, whose duty it was made to collect and disseminate information, to discover, devise, and recommend plans of improvement in the organization, administration and instruction of the schools, and through the labors of the Secretary, to awaken, enlighten, and elevate public sentiment in relation to the whole subject of popular education. In pursuance of these objects a series of conventions were held in each county in the autumn of 1838, composed of school officers, teachers, and friends of school improvement. The convention for New London county was held in Norwich, on the 6th of November, before which the Secretary of the Board, Hon. Henry Barnard, delivered an address, in which he advocated as the conditions of any thorough and permanent improvement of the Common Schools of the State—

1. An immediate revision of the laws relating to schools, by which each city and village should constitute one district with power to lay taxes and establish a gradation of schools; and each town be made a school society with similar powers, exercised through a single committee.
2. An immediate and thorough renovation of the school-houses, so as to make them attractive and promotive of the health, comfort, and successful labor of teacher and pupils.

3. The consolidation of districts in cities and villages under existing laws, and the establishment forthwith of a Public High School in each society, in which the course of instruction should be "good enough for the best and cheap enough for the poorest family."

4. The exercise of the power of taxation, which had ceased to be obligatory since 1822, by each school society in aid of the avails of the School Fund, and of rates of tuition collected in advance of the opening of the school for the payment of teachers.

5. The selection of teachers in reference to their natural aptitude to teach, and their previous special training for the duties of the school-room, and their examination by a County Board.

6. The establishment of one or more Normal Schools by the State, or by voluntary association, for the special preparation of teachers, and the assembling of teachers' classes or conventions for a few weeks in each year, in the several counties, for a review of the best methods of school government and instruction.

7. The faithful administration by school committees of the laws relating to schools, as they exist, or as they may be amended, and the awakening of public and parental interest in the condition and improvement of the schools by the publication of an annual report, and by the circulation among school officers, teachers and parents of a periodical exclusively devoted to schools and education.

The delivery of this address occupied nearly the whole of the afternoon, and in the evening* the various topics were discussed and enforced by members of the convention for our own and other towns in the

* The Connecticut Common School Journal for December, 1838, thus speaks of the Evening Session.

"There was one of the most interesting debates, which this movement in behalf of our Schools has called forth. The suggestions of Mr. Foster, as to the difficulty, if not the impracticability, of making our School System as thorough as that of Prussia;—of Dr. Hooker, on the importance of linking our schools in with our town policy, so as to make it the interest of all to look after their management, as after the expenditures for roads and bridges;—of Mr. Rockwell, on the necessity of making our common schools better, before we can expect parents who are able and willing to support private schools, to give them up;—of Dr. Eaton, on the improvement which a gradation of schools would effect, so as to bring the younger children, where it is practicable, under female teachers, and the older and more advanced under a competent male teacher, and on the importance of creating a County Board, or Senatorial District Board, of School Examiners and Inspectors;—of Mr. F. A. Perkins, on the necessity of going up to the fountain head in our plans of improvement, and providing seminaries where teachers could be specifically trained for their arduous employment;—of the Rev. Mr. McEwen, of New London, in his searching inquiries into the manner in which the duties of the school committees had been performed;—of Mr. Breed, as to the miserable policy of hiring cheap teachers, &c.:—these, and other suggestions, were well calculated to interest and instruct all.

The President of the Convention, Hon. Calvin Goddard, in acknowledging

county. In this and similar conventions held in this and other towns of the county and state, the seeds of a thorough school reform were sown broadcast over the community, which would have ripened sooner but for untoward political influences.

In January, 1839, a serious effort was made to effect a reform in the schools of the society. This movement took its rise in the debates of the Norwich Mechanics Association, in whose meetings the question had been discussed at intervals for two years, "Is the School Fund of Connecticut, as at present used, an injury or a benefit to our schools?" The conviction became at last quite universal, that without additional taxation of property for the support of schools, the fund is a decided injury to the cause it was intended to promote. A petition was accordingly prepared, praying the Legislature to grant to school-districts the power of imposing taxes for the support of schools.

By an act of the Legislature, in May, 1839, drawn up by the Secretary of the Board of School Commissioners, in pursuance of the recommendation of his report for that year, school-districts as well as school societies were authorized to provide one or more school-houses, to employ one or more teachers, establish a public library, and to impose taxes on property for these and other school purposes. In addition to the power by societies of consolidating one or more districts, adjoining school-districts, were authorized to associate together and form a union district with power to maintain a union school for the benefit of the older and more advanced scholars of such associated districts.

After the passage of this act, the subject of forming a Union District out of the two districts into which the village of Greenville was divided, in one of which a gradation of schools had already been established in a new school-house with two rooms, erected in 1837—was fully discussed, and resulted in re-uniting the two districts under the name of the Greeneville School District, in the erection of an additional school-house, and an extension of the system of gradation already introduced. The first meeting of the united district was held August 14th, 1839, and the new system went into operation in December of the same year. The movement was popular. The children became deeply interested. Better teachers were procured, and in 1841, a class of lads were

a vote of thanks which was enthusiastically passed, said he had never presided over a meeting characterized by greater harmony, and interest; or where he had more occasion to be proud of the ability and eloquence of the speakers."

prepared for College, one of whom graduated at Brown University, another bore away the highest honors from Yale, and a third, after a scientific course at New Haven, became distinguished as a Chemist in connection with the British Survey in Canada, and is now Professor of Chemistry in the University of Quebec. During that year this school gained the reputation of being the best district school in the State. During the fifteen years which have succeeded, these schools have maintained their excellence and their popularity. The enterprise of the citizens of Greenville has been a standing rebuke to other portions of the town. These schools are greatly indebted for their establishment and continued efficiency to the exertions of Mr. William H. Coit, of Greenville.

In the spring of 1840, the Rev. S. B. Paddock and Mr. Francis A. Perkins, a sub-committee of the Board of Visitors, submitted a report to the Society, in which they recommended that the number of districts be reduced to three, *viz.*: "the 1st, 2d and 3d, to constitute the *first*; the 3d and 4th at the Falls, the *second*; and the old 5th and 7th, now united in Greenville, the *third*." The scholars were to be classified in each district by placing the girls and boys under eight years of age under female teachers, and the girls over eight by themselves under female teachers, and the boys under a male teacher with female assistants. The schools at Greenville were to be continued as they were in three schools which were "unsurpassed by any in the State." This plan was, after some discussion, adopted without a dissenting voice, but was reconsidered in September of the same year, and the project was for that time abandoned.

The condition of our schools for several succeeding years was truly lamentable. The various departments of instruction were arranged without any defined system of gradation. Many of them were kept in crowded, unventilated, and sometimes even filthy rooms. The teachers were inadequately paid. School-meetings commanded an attendance of from ten to twenty persons only, and the whole subject of education seemed to occupy a very subordinate place in the interest of the community at large. The exertions of some individual teacher would occasionally elevate a particular school. But unsustained by the support of the adjoining portions of a well compacted system, it would soon sink back again to the general level. But very few of the children in the public schools received a thorough training even in the rudiments of an English education, while no facilities for higher study were

afforded to those who desired to become master mechanics, accomplished navigators, or thorough business men. Preparation for college and professional life was confined to the rich. No poor boy, however great his talents, or noble his aspirations, could enjoy the privileges of classical study.

About the year 1848, six gentlemen, deeply interested in securing a reform, undertook the office of school visitors, determined that if it were possible to accomplish it, the schools should be made thorough and efficient, without a change of system. A school-district was assigned to each of five members of the board, the schools of which should be under his immediate care, while to the sixth was committed the general superintendence of the whole. The schools were all visited at least once in a month and their condition reported to the board. After two years' trial of their efforts, though some gratifying improvement had been made, the board came unanimously to the conclusion that nothing could be accomplished, which would repay the outlay of time and labor, unless the whole system of organization were radically changed.* Accordingly in December, 1849, they recommended to the society the same plan of consolidation and gradation which had been adopted and rejected eleven years before, omitting however the proposal for a High School. The simple and sole object was to procure gradation and system for the lower schools. At this juncture the Hon. Henry Barnard, then State Superintendent of Common Schools, gave several addresses to our citizens which contributed an important aid in the movement. His services were also conspicuous during the preceding struggle. A special committee was appointed by the school society to ascertain the facts bearing upon the subject, who, after a most careful and laborious investigation, reported that the schools and the school-houses were in a very low state, that the interest of parents and children in education was so slight that of 1,800 children within the limits of the society, between the ages of four and sixteen, more than 600 were unconnected with any school, public or private;† that an organized and graded sys-

* We consider this a decisive experiment as respects the working of the old society and district plan to which Connecticut has been so long accustomed. No effort was spared to make it successful. But it failed. If we mean to have gradation, system and thoroughness, we must have a simple town organization with a single board to control and manage it.

† It will be interesting to note here the improvement which a change of system has produced. The central districts of the society, have since become

tem would be far less expensive than the one in vogue, if the schools were otherwise of the same quality as at present; that after suitable houses should be built and paid for, we could even have far better schools at a less cost; concluding with the recommendation of a plan in accordance with their views.

The scenes which followed the presentation of this report, we are only too happy to bury in oblivion. Without therefore detailing incidents over many of which even stern history will permit us to draw a veil, it is enough to say, that the simple and moderate proposal to unite our central school-districts, so far as by a distinct vote of each they might consent to the plan, for the purpose of properly grading and organizing the schools, called into activity an opposition so unreasonable and unscrupulous, that it would be difficult to find its parallel among the multitude of similar popular excitements which school reform in New England has uniformly encountered. But in this case, as in many others, evil worked out good. For several weeks the public mind was kept in a constant excitement upon the subject, and an amount of information was diffused through the community greater than twenty years of ordinary effort could have given. The raised expectations of the people were however doomed to disappointment. The whole project was scornfully rejected! This was a glorious defeat, for it had in it the germs of a future triumph. The friends of education were happy to see it perfected by the exclusion, by a popular vote, of the offending visitors from office. Men had now full leisure to look upon what had been done. The eyes of hundreds were directed to the public schools. Are these things so? was the question in every mouth. Gradually the people became convinced of the facts which had been reported by the committee. Indignation and mortification were excited by turns in view of the past. Anxiety for the future gave birth to a robust determination which was a sure presage of success. The lower the schools sunk, and the more closely they were scrutinized, the more certain became the coming reaction.

This was the soil into which the seed was cast from which grew

consolidated and have adopted an admirable system of graded schools, expending more than \$55,000 upon new buildings. In those districts, of 961 children, 710 are in public schools, 161 in private, leaving only 90 of the whole number out of school. Sickness, or tender age, or early entrance upon business, will probably account for the absence of the 90. We may say that now all our children, who are capable of attending, are in school. Truly a wonderful change!

the grand enterprise whose successful beginning we celebrate to-day. In the midst of the struggle, a gentleman, since a large donor to the institution, declared more in jest than in earnest, "These men talk about a High School! I would not take one for a gift if it is to be managed by such assemblages as we have lately had at the Town Hall. I am in favor of an endowed school and would give \$5,000 towards one." This chance remark suggested the idea of this Institution, and led to a series of inquiries and investigations which were continued for two years. The first question was, Are public high schools, supported by taxation, in all respects successful? the second, Would endowed free schools remedy their defects? the third, On what plan should endowed schools be conducted in order to insure success? On these points either by correspondence or by personal interview, a large number of the leading educators of the country were consulted. It was ascertained that in all quarters apprehension was beginning to be felt in regard to the working of our higher public schools. The lower schools up to the grade of the grammar school, were well sustained. Men were to be found in all our communities who had been themselves educated up to that point, and understood practically the importance of such schools, in sufficient numbers to control popular sentiment, and secure for them ample appropriations and a steady support. But the studies of the High School,—Algebra, Geometry, Chemistry, Natural Philosophy, Ancient History, Latin, Greek, French and German, were a perfect "terra incognita" to the great mass of the people. While the High School was a new thing and while a few enlightened citizens had the control of it, in numerous instances it was carried to a high state of perfection. But after a time the burden of taxation would begin to be felt. Men would discuss the high salaries paid to the accomplished teachers which such schools demand, and would ask, "To what purpose is this waste?" Demagogues, keen-scented as wolves, would snuff the prey. "What do we want of a High School to teach rich men's children?" they would shout. "It is a shame to tax the poor to pay a man \$1,800 a year for teaching children to make xs and pothooks and gabble parlez-vous." The work would go bravely on; and on election day, amid great excitement, a new school committee would be chosen in favor of retrenchment and popular rights. In a single day the fruit of years of labor would be destroyed. Such occurrences it was ascertained, had already become sufficiently numerous to excite serious alarm among the most intelligent friends of educa-

tion. Even in communities where the High School had been uniformly prosperous, it appeared that the same influences were at work and awakened constant apprehension. The proposal to establish an endowed High School was regarded by all the gentlemen consulted with great favor, and a uniform opinion was expressed that, properly managed, it would supply all the defects in the public High School. Indeed the plan though generally pronounced as impracticable, was hailed with enthusiasm, as at least a theoretical solution of a very perplexing problem.

The next point was to ascertain the principles which should form the basis of such an enterprise. The Putnam school at Newburyport seemed to furnish the best model for imitation. This school had received an endowment of \$50,000 from Oliver Putnam, Esq., of Newbury, and was then in successful operation, extending a most beneficent influence over a wide circle of common schools in Eastern Massachusetts. One unfortunate error had however been committed by its founder in assigning the election of trustees to the town. A noted political leader, taking advantage of this circumstance, persuaded the people that Mr. Putnam's design in founding the school, was not so much to raise the standard of education, as to relieve his fellow citizens from the burden of taxation, and proposed that the school should be made a substitute for one of the public schools of the town. There is great danger that the benevolent design of Mr. Putnam, will be frustrated by the same popular influence which is sapping the foundations of many of our public high schools. Another salutary caution was given by the experience of the endowed school at Colchester. The funds there, are under the control of a self-perpetuating board of trustees. But the school embraces all departments of instruction from the infant school upward. Thus it becomes a rival to the common schools, and depresses rather than elevates them. Various other points in the plan became the subject of careful thought and inquiry. The effort was made to obtain all the light which the experience and skill of practical educators could furnish, though the painful conviction still remained, that others would, in like manner, hereafter learn wisdom from the errors into which we might fall.

After the plan had been matured as fully as possible and the important facts bearing upon the case had been collected, a few of our most intelligent citizens were consulted in regard to the possibility of realizing it in Norwich. These gentlemen all received the proposal with deep interest; but the effort to raise \$75,000 for such a

purpose in our little city, seemed to most perfectly visionary. The very magnificence of the project, however, awakened enthusiasm. Desire, as is often the case, was stimulated by the difficulty of securing gratification. An intense feeling, already described, created by the contest of 1850, and by the present lamentable condition of the schools, existed through the community. The moment was in all respects propitious. It was suggested that some one individual might be found who, imitating the example of Mr. Putnam, would give the entire sum required. Our honored President advised that ten persons should be invited to give \$7,500 a piece, intimating that he would be one of the ten. Accordingly in the spring of 1853, a letter was addressed to a few of the wealthiest and noblest men of the city, detailing the facts in relation to our schools, giving some testimony in regard to the usefulness of high schools in other places, setting forth the superiority of an endowed school to one maintained by taxation, and unfolding the main features of the proposed plan for this school. This letter was first put into the hands of our President, who at once assumed one-tenth of the amount. It was next presented to another member of the present board of trustees, to whose persevering efforts we are mainly indebted for the final completion of the subscription, and after due consideration another tenth was added. Next a note was dispatched to another member of the board of trustees, who with the President has since enlarged his subscription to more than \$10,000, and in half an hour the answer was returned that he would give "one-tenth of \$75,000, or one-tenth of any other sum which might be raised for the purpose." Next the owners of this beautiful enclosure were applied to. Providence had there also prepared the way, for they were found considering with deep interest an independent plan for devoting their grounds to a similar purpose, and after careful examination, they gave cheerfully these five ample acres for the use of the academy. Thus four-tenths of the amount were secured. Subscriptions of twentieths followed in a like liberal spirit. The case of one noble man, since gone to his reward, should be especially mentioned, who did not even wait for an invitation to aid in the enterprise, but of his own accord gave his subscription of \$3,750, with some good natured reproaches that he had been passed by. But this fair wind and these bright skies continued but for a time. Darkness soon came upon us, and storms threatened our enterprise more than once with shipwreck. We were disappointed in the hope of obtaining the entire sum from a

few individuals. The whole number of subscribers was thirty-five, the subscriptions varying from \$500 to \$7,500. By the blessing of Heaven, the whole amount was however finally pledged. And we desire here joyfully to recognize and devoutly to acknowledge the good hand of our God in all this enterprise. His providence prepared the place fitted for this undertaking in the succession of events. An influence from Himself could alone have inclined the hearts of the people to this unexampled liberality. And sure we are, that from Him only could be emanated the courage, and hope and strength which sustained the hearts of those who, for fifteen months, toiled through many a period of darkness and doubt, to a consummation which we can not err in regarding as fraught with blessings for the future generations of our children, the value of which no human mind, though aided by the most ardent enthusiasm, can fully estimate. "Not unto us, not unto us, but unto thy name, O God, give glory!"

A few additional facts will close this historical sketch. A corporation consisting of the thirty-five original donors, was constituted by the legislature of 1854. Whenever the number of this corporation shall be reduced by removal or death, below the number of twenty-five, the remaining corporators are empowered to elect new corporators, so that the number shall be maintained at twenty-five. This is therefore a self-perpetuating body. The corporation elect yearly three trustees, to hold office for three years. This board of nine members has the entire charge of the Institution during their term of office. The entire sum at first subscribed for the academy was about \$76,000. Of this, \$50,000 are reserved as a permanent fund for the support of teachers. Of the balance, \$8,000 are invested in five and one-half acres of land, leaving \$18,000 for the building. This sum being deemed insufficient to erect a house adequate to the anticipated wants of the Institution in coming years, \$10,000 additional were raised, \$4,500 of which were subscribed by three of the largest donors to the previous fund. Three individuals have therefore given over \$10,000 each, and another \$8,000 to the academy, and the whole number of donors is increased to forty. As a crowning glory to the whole enterprise, the donors of the land occupied by the academy, have made an additional gift of \$5,000 for the endowment of a library, the income of which is to be appropriated annually to the purchase of books, preparing a room at the same time for its reception, and furnishing

a large number of valuable works for immediate use. This is to be called the "PECK LIBRARY."

Such, citizens of Norwich, is the magnificent gift which a few noble men present to us to-day! These grounds, this building, these funds, they now commit to the guardianship of trustees, for the benefit of our children and our children's children, down to the latest generations. Nearly one hundred thousand dollars have been withdrawn from the business, the accumulations, nay in many instances from the ordinary comforts of our neighbors and friends, and with a free heart and an open hand, they bid us approach and enjoy the whole on terms of perfect equality with themselves. They ask no remuneration. They demand no return. They have done this generous deed for the cause of education in this community; and whether we receive it with gratitude or indifference, they will have their reward. Yet who does not feel that some acknowledgment is due to these noble men? Who would not feel ashamed if they should have occasion to say that, as they speak of this enterprise, no response indicating appreciation and interest is returned, and as they mention the few remaining necessities of the Institution to those who are to share in its privileges, whose possessions have been and are to be enhanced in value by its establishment, they should meet with a cold refusal accompanied by the intimation that those who had already given thousands should themselves bear the whole remaining burden. Surely that is not the gratitude of a generous high-minded community! That shall not be our response, fellow citizens. I will venture, in your name, to turn to these our benefactors and say—

We accept this magnificent Institution! We thank you for it! We pledge ourselves to watch over it and to cherish it. It shall never want while we have the ability to provide for it. If the growing necessities of the community, or the advancement of education in our land, demand, in the future, the enlargement of its plans and its means, to the full extent of our ability, we will lend our aid. We will strive to make it the glory of our beautiful town—the home of sound and liberal learning—the arena of a severe intellectual discipline—the center of a refined culture in the elegant arts—the forum upon which shall reappear the masters of eloquent speech—the academic hall which shall reutter the teachings of the academic groves—the beautiful temple where "the Fear of the Lord which is the beginning of wisdom," shall lead the fair sisterhood of the arts, the sciences and the philosophies, with all the

humanities of oratory, history and song, to the altar of Him who made this wondrous mind of man, to live and learn and grow forever!

I now pass to state directly the aims and plans of the Norwich Free Academy.

It appears from the foregoing history that this Institution had its origin in efforts, repeatedly defeated, to provide, for all classes in the community, *an education adequate to all the demands of their future occupations*. This is still the desire of its friends. They have no wish to unfit the scholars of this school for the ordinary employments of life. But they do wish to prepare them for a *high success* in whatever employments they may engage. They intend that mechanics and merchants and navigators and agriculturists shall be educated here, who by superior culture and learning shall become masters in their business. They intend that young ladies shall be educated here, not to flit like butterflies through the world, as beautiful and as useless as they, but to adorn society, to mould the mind of youth, to be the honored heads of well-ordered households and to charm by the beauty of an elegant culture and a disciplined mind. They wish to offer to the poorest boy in the community, who aspires to join himself to the noble fraternity of scholars, the opportunity to fit himself for the university or the scientific school. Their motto is—Every employment is dignified and honorable to one who is determined to excel.

It has also appeared that it is a prime object with the founders of this Institution *to improve and perfect the lower public schools*. They charge it upon their successors to see to it that this design be not defeated. They wish to link this school to the system of public schools in this town. They desire that it should by the character of its examinations, encourage, first, *thoroughness* in the studies pursued in the lower schools, and secondly a perfect system and an exact gradation in those schools, so that no class of schools shall cover ground occupied by another. They hope, ere long, to see throughout the town an organization something like the following.

1. The alphabet or *oral school*, in which shall be collected children under the age of seven years, who shall be taught or trained chiefly by oral instruction. The grand object in these schools should be to secure a healthy and uniform development of the budding faculties of the infant mind. They should be schools for training rather than for instruction—for the training of the physical, intellectual and moral natures alike. The elements of elocu-

tion, music, drawing and penmanship might be incorporated with intellectual sports of their little ones. All work should be play in these schools, but the play should be so adroitly contrived as to promote the great ends of education:

2. The *Primary school*, where children who have learned the alphabet, shall be taught to speak their mother tongue, by elementary lessons in elocution; to read it, by combining letters into words; and to write it, by thorough drilling in spelling and by practice in the rudiments of penmanship. First lessons in arithmetic and geography might be sparingly introduced, and special exercises for the development of the various intellectual faculties should be continued. The children would usually leave this school at the age of ten.

3. The *Intermediate school*, in which the study of the English language should still be made prominent, in the departments of speaking, reading and writing. In addition, the work of constructing the language should be commenced, by the study of the rudiments of grammar, and simple exercises in composition. Arithmetic and geography are prominent studies in this department, and the work of mental training should be prosecuted with vigor.

4. The *Grammar school*. Here the study of elocution, penmanship and grammar, before commenced, are to be continued and carried to as high a point of excellence as possible. Arithmetic and political geography are to be completed. Practical exercises in constructing sentences, and to a limited extent, epistolary and historical composition, should be introduced. The history of the United States, the elements of physiology, with other studies should be added, as may be found expedient, while the great work of mental training should be carefully prosecuted.

5. At this point we propose to introduce this Free Academy into the general system. Its founders desire that it should, by every possible influence, encourage the introduction into the lower schools of the general plan here sketched. This course of elementary study lies at the foundation of excellence in every calling in life. It is necessary to the laborer, the artizan, the merchant and the professional man alike. After entering this Institution, the courses of study adapted to different classes of pupils will necessarily diverge. But the same foundation must be laid for all.

A third prominent design in the establishment of this Institution is to promote within it, and to encourage without it, *a thorough mental discipline*. The founders wish explicitly to declare that *education*, that is, a *leading-forth* of the mental powers, is, in their esti-

mation of far more importance than mere instruction. Knowledge, stored in the memory, may easily be lost, but the power to acquire knowledge, and to appropriate it, as easily as the lungs receive and appropriate the vital air, once gained, is never lost. Amid the pressure and bustle of practical life, principles of philosophy may be forgotten, the processes of logic may be thrown aside as useless rubbish, trains of argument may fade from the recollection; but a logical habit of thought, a clear, reasoning mind, once possessed, is a treasure forever. When our schools engage systematically in this business of mental discipline, they will do a work of true sublimity. Neither in the coming years of life, nor through the ages of eternity, shall that work be undone. Such are the convictions of the originators of this enterprise. It is their desire to see a perfected system of mental culture, adapted to the various grades of schools, and calculated to strengthen every mental faculty, introduced into all our elementary institutions from the oral school to the high school. In respect to this Institution, without attempting to prescribe any special course of study, they desire that this grand object shall be kept distinctly in view in arranging the studies, especially of the first two years, and that all the classes of students, whatever their ultimate destination in life is to be, should be subjected to a course of training as thorough and complete as practicable. And they add their conviction that the course best adapted to this purely gymnastic purpose, is the study of the ancient languages, and of the higher mathematics, combined, for purposes of a more elegant culture, with attention to the modern languages, English literature and the fine arts.

The next point which the founders of this Institution desire to notice is the importance of adapting the course of study to the necessities of students destined to *different callings in life*. Accordingly, after securing for all alike, the advantages of the mental training before mentioned, they anticipate the necessity of instituting four distinct courses of study.

The first is designed for those who are destined to enter the college or the university. This course will be almost entirely a classical one, including only to a limited extent the mathematics and the natural sciences. Regarding as they do, this department of education as of leading importance, and as essential to the culture and development of the master minds in the community, they desire that this Institution should furnish every possible facility for the

most thorough classical scholarship. In this direction they wish to connect this Institution with the college.

The second course is designed for those who wish to prepare for the scientific or polytechnic school, with a view of making science a profession. These schools are as yet in their infancy in this country, and the requirements of this class of students will be more easily determined in future years.

The third course is designed for boys who are to complete their school education in the Institution, and enter the various practical employments of life. This course is capable of almost indefinite subdivision and enlargement, the extent of which must be determined by the means possessed of furnishing instruction. The founders express their desire that so far as possible each boy may receive that instruction which will make him thoroughly acquainted with the *principles* of the business which he is to follow, so that he may not be a mere laborer, or journeyman, but a master of his trade, or occupation.

The fourth course is designed for girls who are to finish their school education in the Institution. The founders of this school regard this department of their labors as second to no other in importance if indeed it should not be placed in advance of all. Their sentiments on this subject are briefly as follows:

They believe that the great defect of female education, at present is, the undue prominence given to mere instruction at the expense of mental training. They therefore desire that the studies of the young ladies in this Institution should be modeled somewhat after the gymnastic course designed for the training of professional men. They would be glad to have this method pursued if possible so far as to cover a large portion of the classical course prescribed for the boys who are to enter college. If in any instances this is found inexpedient, they desire that this great principle should still be kept in mind in the arrangements of a more purely English course. They wish that the young ladies who graduate at this Academy, shall be able to think clearly and reason correctly and to express their thoughts either in speech or writing with precision, elegance and force. They wish on the other hand to state their conviction that the female mind is in some respects essentially unlike that of the other sex, as the demands which are made upon it are also essentially different. They do not wish to cultivate a masculine strength at the expense of a feminine facility and grace. This course would rob woman of her power and

alienate her birthright. They desire therefore to mingle with severer gymnastic studies, the study of elegant literature, and of such natural sciences as will lead her steps among those objects of beauty with which God has plentifully filled our world, and of those elegant arts which place man at the side of the great Creator, and enable him, as the child imitates the voice and the hand of the parent, to become himself a creator—elaborating in marble or upon canvas, forms of beauty, and in song reproducing and recombining the harmonies of nature.

In all these various courses they desire that the study of our own mother tongue should have an important place. Next in importance to the power of thinking, they rank the power of using with accuracy, readiness, elegance and force, the great instrument of thought—the language of common life. The modern languages should also find a prominent place in the studies of the school.

Finally, the founders of this Institution desire to repeat, what is already emphatically asserted in the constitution, that they wish the Bible to be made a text-book in the school. By this they do not mean merely that it should be read at the daily devotions, but that it should be studied, as a history, as a book of moral science and of practical ethics, and as a model of literary excellence. They do not intend to tolerate the introduction of any instruction or influence on points of disagreement among Christians; they do not wish that Theology, in the technical sense, should hold any place among the studies of the school. But they do intend that this shall be a Christian Institution; that the motives employed shall be drawn from the truths of the Divine Word; and that the moral conduct enjoined shall be the morality which was taught by our Lord and Savior Jesus Christ and which was exemplified in his spotless life.

In closing this statement of their sentiments and plans, the founders of this Academy would not conceal the fact, that the designs they have now unfolded, which are far more extended than those they at first entertained, will require, as the number of scholars increases, a large increase of the endowment for the support of teachers. But they believe that God, who has so manifestly aided us hitherto, will incline the hearts of many, who shall here enjoy for their own children, advantages procured by the generosity of their fellow citizens, to do for the Institution all which shall be required to make it a blessing and a glory to this ancient town. They wish however to have it fully understood, that the school can not be

brought up to the standard here indicated, at once. The able and experienced teachers, to whom, with the most unlimited confidence we have committed the opening of this enterprise, will do all in their power to bring order and system out of the chaotic elements which they will here find collected. But years must elapse before their ideal can be fully realized. Meantime let them be assured of a hearty sympathy, and a firm support. Honored and beloved as they have been, in other communities, they will, we are confident, feel that they have met with no loss in coming to this. They will here be under no necessity of keeping a watchful eye upon an ever-changing public sentiment, swayed as it constantly is, by appeals to prejudice and passion. They need be under no apprehension that the labors of years will be swept away by a freshet of popular excitement as sudden as unaccountable. We assure them of a steady coöperation in the execution of their plans of culture and instruction, in the administration of a wholesome discipline and in all their efforts to enlarge the sphere and perfect the system of the school.

And now with many anxieties, and many fears, and yet with a good courage and a strong hope, those who have established this Academy commit it to the community and to coming generations. **THEY DEDICATE IT TO DAY TO THE CAUSE OF POPULAR EDUCATION.** They anticipate for it a wide influence and a great success. With confident expectation they look forward to the time, as not far distant, when, embraced within the circle of its genial influence, a complete and perfected system of schools shall spring up through this queenly town, dotting with beautiful structures her fair territory, as jewels glitter upon a royal robe. They trust that within its walls, the facilities for a higher education will be furnished to our sons and daughters, so cheaply that the poorest can enjoy them, and so amply that the richest shall be grateful for the privilege of receiving their benefits.

With these hopes and these plans, they now launch this great enterprise upon the bosom of the wide future. May it prove staunch and strong! may the winds of Heaven blow kindly upon it! and may it, year by year, return to our hamlets and our homes its priceless freight of youthful minds, enriched by learning, developed by a liberal culture, refined by the study of all that is beautiful in nature and in art, and prepared for the highest usefulness and the purest happiness.

PLANS OF SCHOOL-HOUSES IN NORWICH.

NORWICH FREE ACADEMY.

THE NORWICH FREE ACADEMY represented on pages 696 and 697, occupies one of the most eligible sites in the world,—a lot of over six acres perfectly level in front, and rising into a beautifully wooded hill in the rear, commanding a fine view of the city and surrounding country.

The building was erected after plans by Mr. Evan Burdick, Architect, Norwich, at a cost of \$30,000 exclusive of the land.

The building is 87 feet with a front projection of 24 feet by 12, surmounted by an Observatory.

In the Basement, besides the furnaces and the coal-bins, there is a working laboratory, connected by stairs with the philosophical lecture room on the first floor.

On the first floor, besides separate clothes room, one for boys, and the other for girls, there is a Lecture room, and a Library, for the supply of which, Gen. Williams and wife have given a fund of \$5,000.

The Second and Third floors are now left, each in a single hall with two class rooms attached, but are capable of being subdivided into two rooms, if the organization of the Academy should require it.

For convenience of access, for spaciousness of halls and class rooms, for light, warmth, ventilation, and seating, for the accommodation and use of apparatus, and library, this edifice is not surpassed by any other erected for educational purposes within our knowledge.

CENTRAL DISTRICT SCHOOL.

This building represented on pages 698 and 699, was erected by the Central District of Norwich to accommodate a graded system of schools; there being six rooms, thereby accommodating as many classes or departments. The architect was Mr. Evan Burdick.

The building is 76 feet by 58 feet, with a front projection of 14 ft. by 14 ft. The lot is in 150 feet by 280, well graded and drained and enclosed with an iron fence. The rooms are well lighted, warmed and ventilated, and furnished with desks and chairs manufactured by Joseph L. Ross of Boston. The cost of grounds and building was \$37,500.

PRIMARY SCHOOL.

In the organization of the public schools of Norwich, the committee contemplate the establishment from time to time of a sufficient number of Primary Schools, to accommodate all the young children in the immediate neighborhood of their homes. The diagram on page 700, represents one of the houses erected for a school of this grade, capable of accommodating 112 pupils divided into two classes or departments. Each room is furnished with Ross's school-furniture.

The material is wood, and the cost independent of the site was \$3,000. Mr. E. Burdick, Architect.

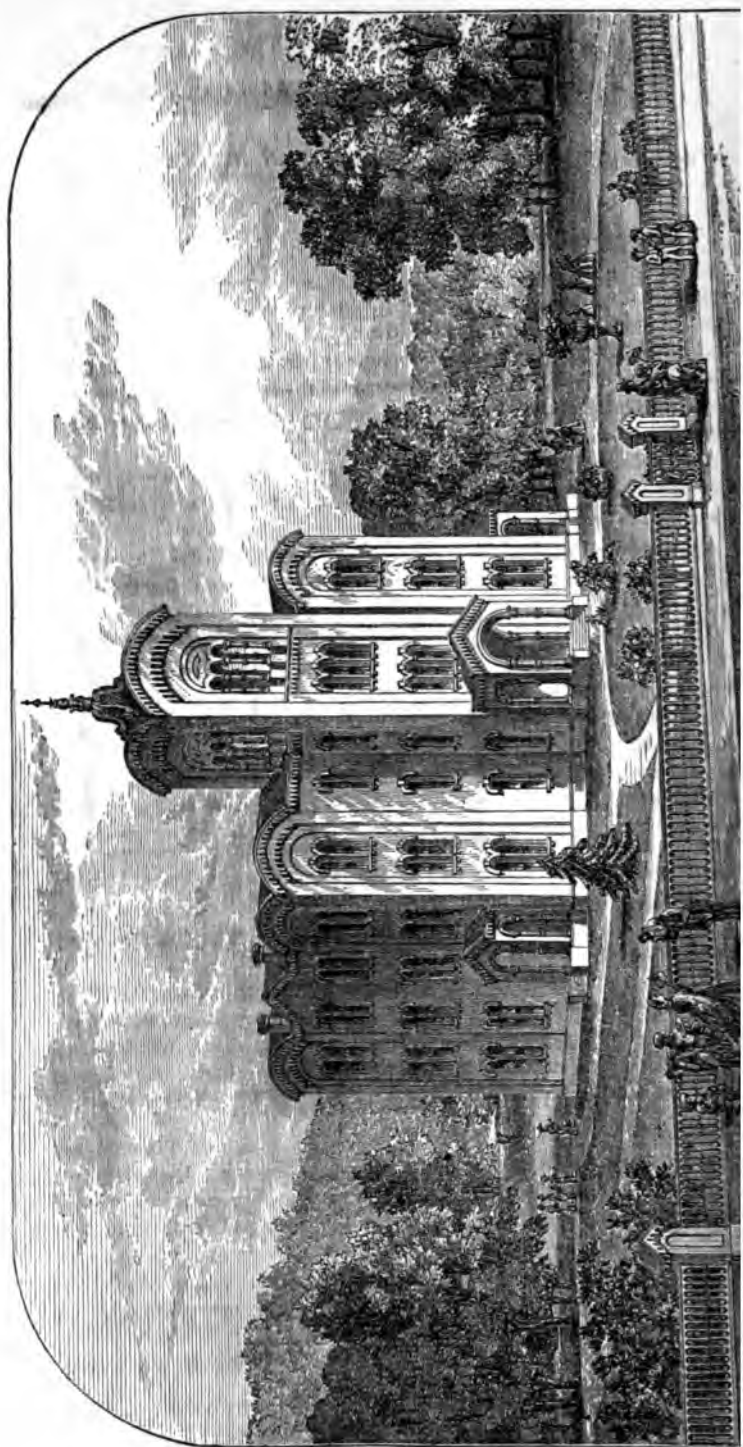


Fig. 2.—BASEMENT.

- A.—Furnace Room.
B.—Laboratory.
C.—Coal Room.
D.—Boys' Play Room.
E.—Girls' Play Room.
a. a.—Stairs.
b.—Area Windows.
c.—Furnaces.
d. d.—Basement Stairs.
e.—Stairs to Laboratory.
f.—Fire Place.
g.—Iron Columns.

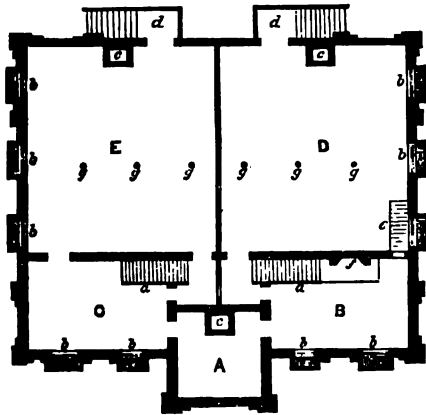


Fig. 3.—FIRST FLOOR.

- A.—Teachers' Entrance
B.—Boys' Hall.
C.—Girls' Hall.
D.—Boys' Clothes-room.
E.—Girls' " "
F.—Lecture Room.
G.—Library.
H.—Hall.
I.—Platform.
a. a.—Stairs.
b. b.—Wash-stands.
c. c. c.—Porches.
d. d.—Teachers' Closets.
e.—Laboratory Stairs.
f.—Ventiducts.
g. g.—Seats.
h.—Iron Columns.
i.—Apparatus.
k.—Book Case.

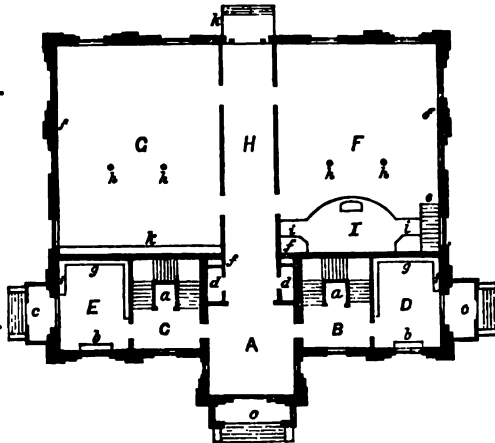
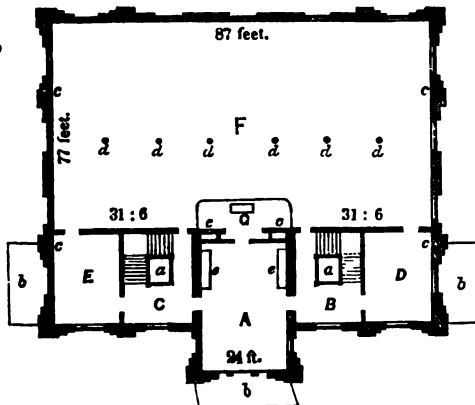


Fig. 4.—SECOND AND THIRD FLOORS.

- A.—Teachers' Room.
B.—Boys' Hall.
C.—Girls' Hall.
D.—Recitation Room.
E.—Recitation Room.
F.—School Room.
G.—Platform.
a. a.—Stairs.
b. b. b.—Roofs.
c.—Ventiducts.
d.—Iron Columns.
e.—Book Cases.



NORWICH CENTRAL DISTRICT SCHOOL-HOUSE.

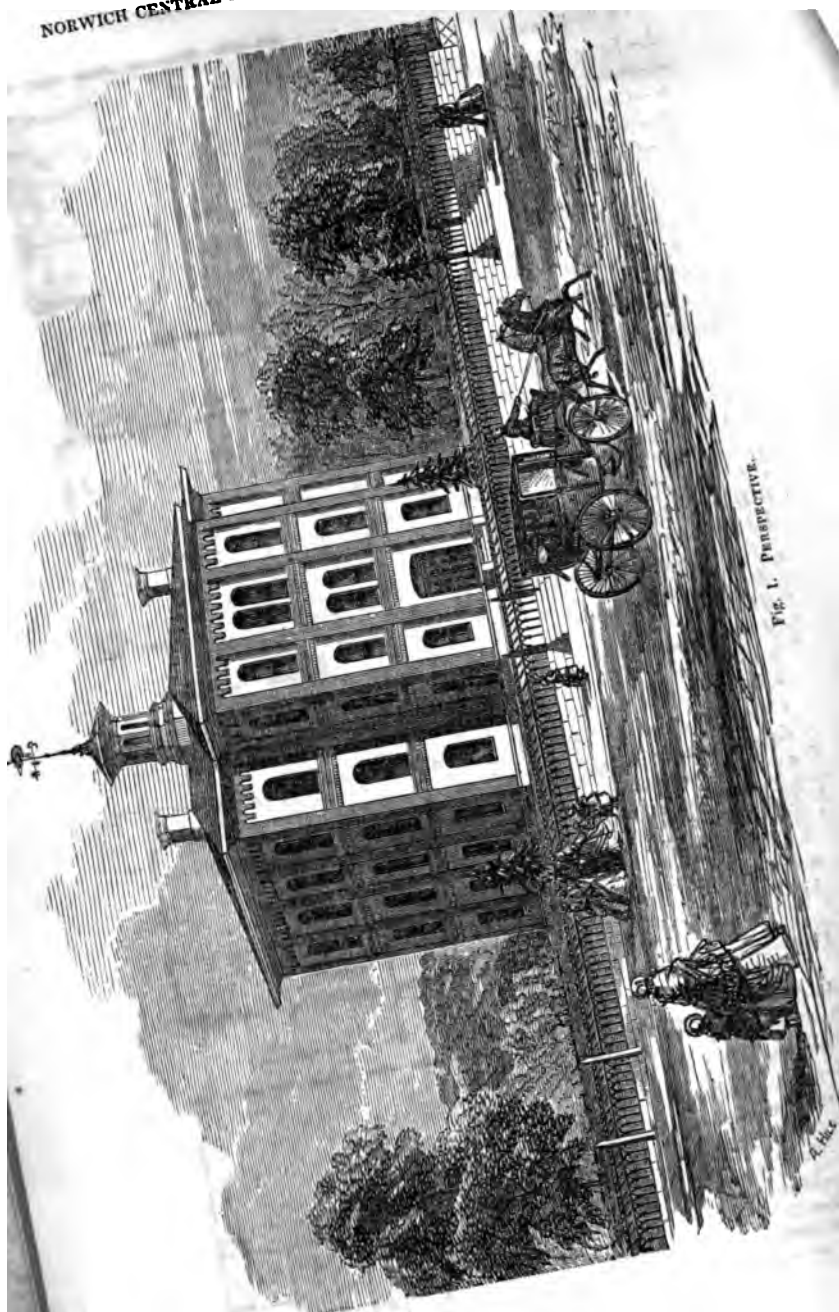


Fig. 1. PERSPECTIVE.

Fig. 2.—CELLAR.

- c. c.* Chilson's furnaces.
- e. e.* Cisterns.
- a. a.* Cellar Stairs.
- b. b. b.* Ventiducts.
- f. f.* Coal bins.
- d. d.* Brick piers.

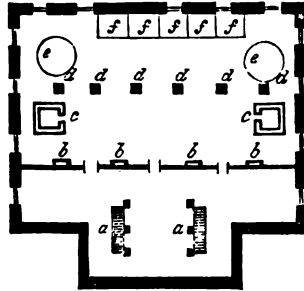


Fig. 3.—FIRST FLOOR.

- G.* Alphabet, or Oral school.
- F.* Primary School.
- e.* Teachers' Platform.
- E.* Clothes-room for girls of Intermediate and Junior Grammar schools.
- I. I.* Halls.
- D.* Clothes-room for boys of Intermediate and Junior Grammar schools.
- H.* Recitation room.
- C.* Boys' Clothes-room.
- B. B.* Closet for Teachers.
- A.* Teachers' Hall.
- Entrances for boys and girls.
- c. c.* Ventilation flues.
- d. d.* Sinks with pumps.
- f. f. f.* Iron Columns.
- i. i.* Umbrella racks.
- h. h.* Hot Air registers.



Fig. 4.—SECOND FLOOR.

- C.* Intermediate School.
- D.* Junior Grammar School.
- c. c.* Teachers platforms.
- E. E.* Recitation rooms.
- A. A.* Halls, one for boys, and the other for girls.
- a. a.* Stairs, one for girls, and the other for boys.
- b. b.* Iron columns.
- d. d.* Ventiducts.
- h. h.* Hot Air registers.

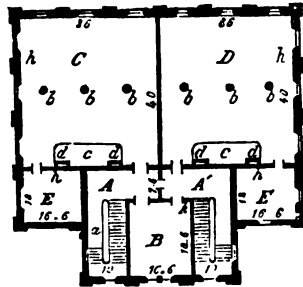
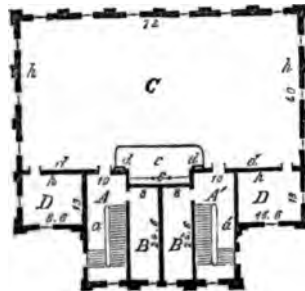
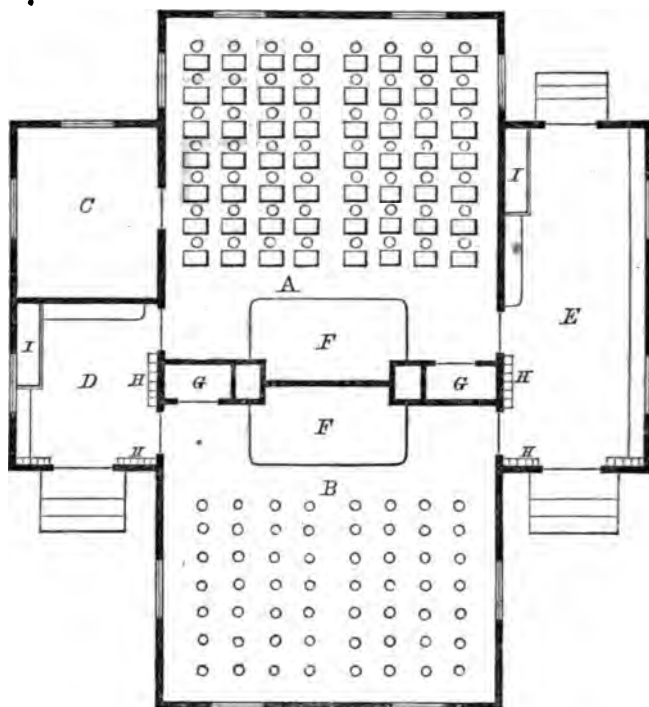


Fig. 5.—THIRD FLOOR.

- c.* Teachers platform.
- C.* Main Floor.
- D. D.* Recitation rooms.
- A¹.* Girls' Hall, 10 by 27 feet.
- A.* Boys' Hall, 10 by 27 feet.
- B¹.* Girls' Clothes-room, 8 by 24½ feet.
- B.* Boys' Clothes-room, 8 by 24½ feet.
- b.* Apparatus case.
- a. a.* Stairs.
- d. d.* Ventiducts.
- h. h.* Hot air registers.



PRIMARY SCHOOL-HOUSE IN NORWICH.



GROUND PLAN.

- | | |
|---|--------------------------|
| A School-room, 24 ft. by 24 ft. 6 inches. | F, F Platforms. |
| B School-room, 24 ft. by 21 ft. 6 " | G, G Closets. |
| C Class-room. | H, H Umbrella racks. |
| D Boys' entry and clothes room. | I, I Sinks with pumps. |
| E Girls' entry and clothes room. | V Flues for ventilation. |

The above diagram represents the Ground Plan of a Primary School-house in Central District of Norwich, erected after plans by E. BURDICK, Architect, at an expense of \$3,000. The main building is 50 feet by 25 feet, with two wings, each 25 feet by 11 feet, and one story high. It is built of wood and finished throughout in the most workmanlike manner, with a spacious play-ground, well graded and enclosed. Both rooms are furnished with Ross's furniture,—the Alphabet, or Oral school with chairs, and the Primary department with a desk and chair for each pupil.

XII. EDUCATIONAL MISCELLANY AND INTELLIGENCE.

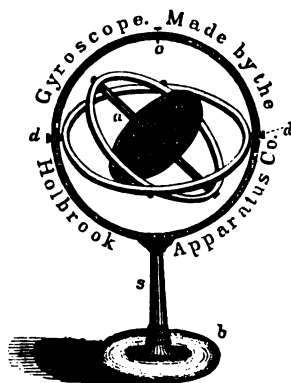
THE GYROSCOPE, WITH EXPLANATIONS AND EXPERIMENTS.

BY E. S. SNELL,

Professor of Natural Philosophy in Amherst College, Mass.

[The substance of the following article was delivered as a lecture before the Smithsonian Institution on *Planetary Disturbances*, in 1855, and published in the Report of the Regents for 1856. We are indebted to Prof. Henry, Superintendent of the Institution, for the use of the cuts with which it is illustrated.]

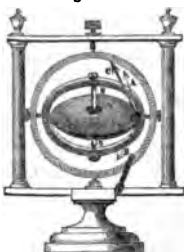
No. 1.



Hartford, Conn.

The Gyroscope, in the form here represented, (Fig. 1.) is essentially the same, on a smaller scale, as the Rotascope of Professor W. R. Johnson, a description of which was given in *Silliman's Journal*, Jan. 1832. And the Rotascope was an improvement on Bohnenberger's instrument for illustrating the Precession of the Equinoxes.* The experiments of the gyroscope are not new, nor inexpli-

Fig. 2.



* Fig. 2, represents the rotascope recently constructed for the Smithsonian Institution, being somewhat more simple than that described by Professor Johnson. The disk, in the form of a very oblate spheroid, is about ten inches in diameter, made of box-wood, with a brass band in the equator, and a steel axis. This is suspended in two strong brass rings, the inner revolving on a horizontal axis, the outer on a vertical one, the pivots for the latter being at the top and bottom of a rectangular frame of mahogany, supported by a heavy base of the same material. The whole instrument weighs thirty or forty pounds. The disk is accurately centered in the inner ring, so as to rest in any position; and all the parts revolve on polished pivots, with the least possible friction. At the bottom of the frame lies a forked piece of wood, which works on a tight hinge, and can be turned upward so as to embrace and hold fast either the outer ring alone, or both the

rings. By this means, the experimenter can have the use of both hands to give a swift rotation to the spheroid. This is best done as follows:

cable, as many seem to suppose; for they were all performed by the rotascope at least twenty-five years ago; and the *theory* of compound rotations, which these experiments illustrate, has been known for a century and a half, and applied to the explanation of the precession of the equinoxes, the retrograde motion of the moon's nodes, and the nodal movements generally in the solar system.

It is a direct result of the inertia of matter, that a body revolving freely on an axis, preserves that axis parallel to itself, wherever in space the body may be transported.

EXP. 1. The disk of the gyroscope, being accurately balanced in rings whose axes are at right angles, is free to take any position whatever. If now it be rapidly whirled, the whole instrument may be carried anywhere, and turned round or turned over in any manner, without disturbing the rotation of the disk; its axis will point in one and the same direction.

To understand the explanation of the following experiments, it must be borne in mind, that when a particle or mass of matter is impelled by two forces at once acting in different directions, it takes a direction *between* them, in a line nearest to that of the greater force. If, then, the disk is already revolving on its axis, and a force is applied to turn it on some other axis, the particles are subject to two forces at once, and will move in a direction *between* them, compelling the first axis to change its position *toward* that of the second axis. Every instance, in which the axis of the disk is seen changing its direction, is an example of the action of at least two forces, one of which is the inertia of the disk tending to revolve parallel to itself.

EXP. 2. Let the middle ring be so suspended in the outer one, that when all the rings are brought into one plane, the axis of the disk is horizontal. Place the axis north and south, with the top of the disk moving east, while the middle ring is vertically east and west. Now gently press the bottom of the middle ring northward; the north end of the axis begins to turn eastward, and will do so, (if the outer ring is held still,) till it points east. If the pressure is southward, the axis goes the other way. Consider the particles in the upper half of the disk; they are going swiftly eastward, and by the force on the ring, they are pressed gently southward; they will, therefore, go between these two directions, and revolve to the south-east; in other words, the north end of the axis moves to the east. The particles in the lower half conspire to produce the same effect; for they are revolving westward, and at the same time are pressed northward; hence they move N. W. The plane of the disk is now a little inclined to N. W. and S. E. and will become more so, if the pressure is continued.

EXP. 3. Again, place the disk as in (Exp. 2,) revolving also in the same direction, and while the outer ring is held in the east and west plane, with the finger-nail or the smooth end of a wire, gently press the north side of the inner ring westward; instead of moving in the direction it is pushed, the ring will *slide up* along the nail or wire, till the axis becomes vertical, when the ring for the first time seems to yield to the pressure. The reverse happens, if

Having a strong smooth cord a yard long, with a wooden cross handle at each end, the operator doubles it in the middle, and placing the loop on a small pin at the middle of either half of the axis, he winds up both parts of the cord at once, and then draws the ends apart by the hands. The instrument thus stands firm between the opposite forces, and a double velocity is given to the disk.

The rotascope belonging to the Smithsonian Institution was copied, with some valuable improvements, from the one contained in the Philosophical Cabinet of Amherst College, which has been used in the lectures given there, for twenty-two years.

the pressure is the opposite way. In the first case, the east half is *descending*, and pressed *northward*; it goes *between* these two directions, which of necessity elevates the north pole of the axis. The western half conspires; for it is *ascending*, and pressed *southward*, and therefore moves *up obliquely to the south*, thus elevating the north pole.

Fig. 3.



FIG. 3, exhibits a similar experiment with the rotascope. While the west side of the spheroid moves *down*, in the direction of the dotted arrow, the west side of the outer ring, and therefore, of the spheroid, is pushed *southward*, as shown by the single-shaft arrows. Between these two forces, the west side descends obliquely to the south, in the direction of the double-shaft arrow. Hence the north pole of the spheroid is depressed, and the south pole is elevated.

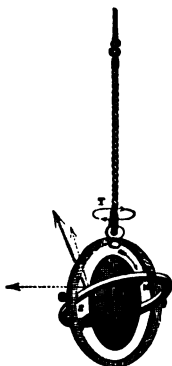
Next, suspend the middle ring of the gyroscope, as in (Exp. 6,) so that when the three rings are in one plane, the axis of the disk is vertical; and fasten the middle and outer rings together by the tightening screw at the top. The parts are now arranged as in the rotascope, the inner ring turning on a horizontal axis, and the outer on a vertical axis, the socket and pointed standard serving instead of the wooden frame.

EXP. 4. Spin the disk,—take up the outer rings by the right and left sides in the two hands, and carry the instrument round yourself in the same direction the disk is revolving; then turn round the opposite way, and instantly the disk will throw itself over with energy, so as to revolve the same way in which you carry the whole. Or, (which amounts to the same thing,) set the instrument on the iron standard, and attempt to turn round the outer rings in a direction the reverse of that in which the disk revolves; and the latter will immediately turn a somersset as before. Here again is a composition of two rotations. The moment the axis is jarred from a vertical position, (as it inevitably will be,) it cannot recover its position, because the resultant of the two motions throws it still farther from the vertical. For example, let the right half of the disk in its rotation approach the experimenter, and suffer a jar, by which it *ascends* ever so little from a horizontal plane, while he presses the right side of the ring, and therefore of the disk, *horizontally from him*. To go between these two directions, the right side must ascend at a larger angle from the horizon, and thus by continued pressure, the angle between the two rotations is diminished, till the disk is completely inverted, and the revolutions coincide. If the disk is *now* jarred, it instantly recovers its position, because the two motions make an acute angle, and the resultant lies between, tending to reduce the angle to nothing. If, in the foregoing experiment, the first disturbance is the other way, and the right side approaches *descending*, the same result will take place,—the disk is inverted, but turns over in the opposite direction.

EXP. 5. Another form of the last experiment is perhaps still more striking. After whirling the disk, take the instrument up by the socket as a handle, and, holding it bottom up, attempt to twirl it by the thumb and finger, one way, and then the other; or, holding it firmly in *any* direction, roll the hand from right to left, and the reverse. In either case, the disk will begin to invert itself the moment you turn the rings in the contrary direction. And by a little management, you can make the inversion take place continually, and in one direction, so that the inner ring has a rapid rotation on the pivots of the outer rings.

In the foregoing experiments, as the axis approaches its position of equilibrium, the rings are felt to move with greater and still greater ease. This is because the two motions *nearly conspire*. When they *exactly agree*, no resistance is felt, in attempting to push the ring.

Fig. 4.



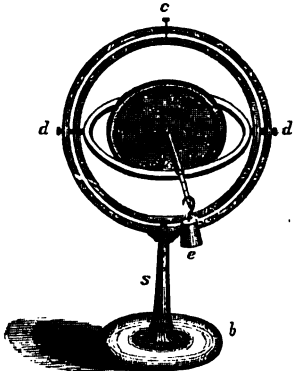
With the rotascope, experiment (No. 5,) is best performed by suspending the outer ring from a bundle of parallel cords, about two feet long, as represented in (Fig. 4.) Let the cords be twisted up in the direction the disk revolves: then, by the force of torsion, they will begin to untwist. But the motion is suddenly stopped, and the force is exerted, (in connection with the inertia of the disk,) in turning the disk over, after which the cords freely untwist, twist up in the contrary direction, and once more commence untwisting. Again the process is arrested, till the disk takes time to invert itself, and get ready to go the same way. And this operation is repeated several times before the spheroid loses its velocity.

It is to be observed, that in explaining (Exp's. 4 and 5,) the supposition is made, that the disk or spheroid is first *jarred* a little to one side or the other, before the forces

tend to invert the axis. And it is strictly true, that if no accidental disturbance throws the axis aside, the disk *can* revolve in one direction, and the rings in *exactly* the opposite, with entire freedom, except as they will slightly diminish each other's velocities by friction at the pivots. There is *no tendency* to inversion. This is, however, a state of *unstable equilibrium*. Just as a cone, standing on its apex, with its centre of gravity vertically above it, is in a state of unstable equilibrium. It is truly *supported*, and gravity does not in the least tend to make it fall, *until* it is jarred from the vertical; but from that inclination however minute, gravity cannot restore it, but only causes it to deviate the more. The disturbance, however, is inevitable. The cone is sure to fall; and the disk in these experiments is equally sure to be inverted.

EXP. 6. Next remove the middle ring, (Fig. 1.) from the outer and turn it one-fourth round till the screws d, d' enter sockets in the heads of the screws which

Fig. 5.



connect the middle and inner rings, as shown in (Fig. 5.) Having revolved the disk, and placed its axis nearly horizontal, hang the brass weight on the inner ring, near one end of the axis, as in (Fig. 5.) The whole system now commences revolving horizontally; and if free from all obstruction, would thus revolve perpetually. This result differs from the preceding in this, that the motion *continues*; the disk does not, after a time, reach a position in which the two forces act in the same direction. The reason is quite apparent. The weight itself is carried along as fast as the disk is, and thus always acts at right angles to the rotation of the

disk. If, for example, the top of the disk is revolving west, and the weight is on the north end of the axis, it urges the top to the north. Hence the disk takes a motion a little to the north of west; but the weight does not *now* press the top towards the *north*, but towards a point a little to the *east of north*; when the disk turns a little farther, and so on, continually.

It is not difficult to determine what effect *friction* will produce in this experiment. In the position of the axis mentioned above, the friction of the socket on the standard opposes, in a slight degree, the motion of the north pole toward the east. It must, therefore, be regarded as another force, pressing the eastern half of the disk towards the *north*, while by its rotation it is *ascending* vertically. It must, by this joint action, *ascend inclining* northward, *i. e.* the north end of the axis will *descend* slightly under the weight. This is always noticeable, especially after the disk loses some of its velocity: for then the friction becomes relatively a greater force. The effect of friction can be readily neutralized from time to time by a slight pressure against the ring in the direction of its motion; the weight is instantly elevated to its place, and even to any height, by more pressure.

The foregoing experiment is the one which illustrates the precession of equinoxes. The disk represents the equatorial ring of the earth; a horizontal plane through the centre represents the ecliptic, into which the weight tends to tip the disk, as the earth and moon do the earth's equator; the side-screws are the places of equinoxes, or intersections of the ecliptic and equator, which, as the experiment shows, revolve in a direction opposite to that of the earth. In the solar system, there is *no friction*, operating to diminish the inclination of the planes; hence, except the minute oscillations which it undergoes from a higher order of disturbing influences, it remains perpetually the same.



Fig. 6.

Fig. 6, represents the rotascope, as it is used to illustrate the precession. A wooden ring, representing the plane of the ecliptic, stands around the centre of the frame, and a weight is attached to the inner ring at *w*. The *single* arrows show the direction in which the spheroid revolves; and the *double* arrows indicate that the screws, *l* and *r*, (which are the equinoxes,) move in the opposite direction.

EXP. 7. Take the inner ring and disk from the outer rings, and attach a short bar to the ring at one end of the axis. At the end of this bar is a swivel-hook, for sustaining the ring by a cord, or an indentation for resting it on the pointed standard. Revolve the disk rapidly, and then suspend it by a cord, (Fig. 7,) and take the hand *suddenly* from the opposite side of the ring. The whole will now revolve horizontally about the centre of support, in a direction opposite to that of the upper side of the disk. Though more magical in appearance, this phenomenon is explained like the others. Gravity is not *suspended*, but is every moment exerting its full effect, in combination with the rotation of the disk, to produce the horizontal revolution. Let the unsupported extremity be to the north, and the upper half of the disk revolving west. Gravity tends to move the same particles toward the north in a descending arc. Between these two forces, it tends to go towards the north-west, and thus carry

the support westward; but as that point is fixed, the disk is moved eastward. This effect is permanent, for the same reason as in (Exp. 6.) The angle between the two forces is of necessity always a *right* angle.

Friction slightly opposes this horizontal motion, and the ring therefore gradually falls; but it will rise again, if urged forward a little faster.*

It usually surprises the operator, that, if he supports the edge of the ring on his finger, and lowers it *slowly*, the ring falls with it. The reason is, that so long as his finger *touches* the ring, the *friction* between them is sufficient to prevent the horizontal revolution. Let him move his finger down a little quicker than before, and he will *feel* the ring slipping along horizontally, as if to escape, as soon as he shall permit.

Observe again, that the longer the experiment is continued, the swifter does the revolution become. That results necessarily from the fact that the disk revolves more slowly, the longer it runs. At first, the inertia of the wheel was much the greatest force, and the resultant made a very small angle with it, and the disk therefore changed its direction slowly; but as the velocity of the disk is diminished by friction and resistance of the air, while gravity remains the same, the resultant makes larger angles with the plane of the disk, and it changes its direction more rapidly.

Remove the upper part of the Gyroscope (Fig. 1.) from the standard *s*, and resting the indented ear on the point of this standard remove the finger from the opposite side *horizontally* and suddenly. The ring will remain supported and will revolve around the standard. A weight of half a pound or more may be hung on the outer end if the axis is inclined above a horizontal. The ring will be found to retain any inclination given it. In this, and in every other experiment the disk should be revolved very rapidly.

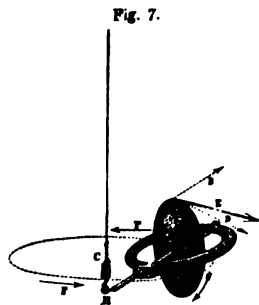


Fig. 7 represents the foregoing experiment as exhibited by the inner ring and spheroid of the rotascope. The particles at *a*, are moving in the line of the arrow *e*, by the *rotation*, and tend toward *b*, by the force of *gravity*; hence they take the intermediate direction, *c*. This tends to throw the swivel, *c h*, to the right, as shown by the arrow, *f*; but if *h* is stationary, the spheroid, *g*, will by the reaction be urged to the left, and circulate around *h* in the direction indicated by the arrows, *f. f*. If the cord is ten or fifteen feet long, and care is taken to place the centre, *g*, directly under the upper end of it, the instrument will whirl round in its place, and

the cord will describe a conic surface about it,—*h* revolving about *g*, instead of *g* about *h*. The spheroid and ring weigh fifteen pounds, and *g* is more than a foot from the support, *h*.

EXP. 8. Attach a cord to the end of the stem, and suspend the ring and

* If the disk is spun very rapidly, and elevated several degrees above the horizontal position, the friction of the indentation on the standard, instead of depressing the disk, will cause it to rise up towards a vertical, in the same manner as a top. And the explanation in the two cases is the same; but the reason cannot be well given, except by mathematical formulas. Some of the phenomena of the top are more perplexing to the mathematician than those of the gyroscope.

disk, as a pendulum; and after revolving the disk, attempt to swing the pendulum. The lower end will instantly begin to lift itself, and turn round the contrary way from that of the disk. This is the necessary effect of two rotations, one on the axis of the disk, the other on a horizontal line at the top of the string. For example, let the northern half of the disk be revolving to the west; and let the ring be at the northern extreme of its vibration, about to descend. The particles of the northern half, moving *west*, and at the same time by gravity urged *downward*, commence moving *between* these two lines, i. e. in a *westerly downward* direction; and thus the lower end of the axis is thrown *upward* and *eastward*, tending to revolve horizontally at some elevation.

The southern half of the disk, revolving *east*, and pressed *upward*, *relatively to the centre*, (since it is now *lower* than the centre, but at the bottom of the arc of vibration, will be *just as low*.) must tend to *ascend eastward*; thus conspiring with the northern half to force the lower end of the axis to the east.

If the hand holding the pendulum is carried horizontally back and forth, with the ring and disk hanging beneath, no such effect is produced; for there is now no *revolution* about a second axis. The disk is free to preserve the parallelism of its axis, as in (Exp. 1.)

The pendulum experiment may be performed by using the arm instead of a cord. Take the stem attached to the inner ring in the hand, and swing it in the manner of a pendulum, and the writhing motion will be *felt* very plainly, requiring some care lest the stem be wrenched out of the hand. While the arm swings forward, the ring crowds to the left; and while it swings back, to the right,—or else the reverse in both cases,—according to the direction in which the disk is revolved.

EXP. 9. Having the disk and inner ring detached from the other parts of the instrument, whirl the disk, take the ring in the hand, and move it in *almost* any manner you please, and you will feel resistance offered to such a motion;—that resistance, however, not directly *opposed* to the motion, but tending to turn the instrument into some *oblique* position. The only case in which you will *not* perceive such an effect, is when you carefully keep the axis directed to the same point of compass. For then the force applied does not tend to revolve the disk on another axis; whereas, in every other movement, such a revolution is attempted, and the resultant effect of the two revolutions is what the experimenter perceives. If a whirling disk should be concealed in a light box, every one who should handle the box, would be disposed to think it contained a living and powerful animal, struggling to get free.

The Gyroscope is made in a variety of simpler forms. One of them consists of the inner ring and disk to which is attached an arm at one end of the axis as in (Fig. 7.) An indentation where the arm joins the ring allows the whole to be placed on the standard, when a weight may be placed on the arm at sufficient distance to balance the ring. If the disk is now revolved, the whole instrument remains stationary; but if the weight be moved nearer the standard a revolution takes place;—if it is moved further from the standard the revolution will be in the opposite direction.

ENGLAND.

MISS BURDETT COUTTS' PRIZES FOR TEACHING COMMON THINGS TO GIRLS.—The efforts to give prominence to instruction in common things—a practical knowledge of the duties and phenomena of every day life—commenced by Lord Ashburton and described at length in Volume 1, page 629 of this Journal, has received a new impulse by a prize scheme for female teachers and for girls instituted by Miss Burdett Coutts. The three sets of prizes amount to £50, and were offered to school-mistresses in schools connected with the church of England who have pupil-teachers apprenticed to them, under government inspection; to the pupils in the Whitelands Training Institute and to female pupil teachers in the county of Middlesex. We do not propose to give all the details of the scheme, but we make the following extracts from a beautifully printed volume of 89 pages [entitled,—*A summary account of prizes for common things offered and awarded by Miss Burdett Coutts at the Whitelands Training Institute, 1855–56.* London: Hatchard,"] which we have just received from London, to show the practical character of the plan.

SUBJECTS for instruction in common things to schools for girls upon which papers may be prepared or lessons given, in competition for the prizes offered.

I. **FOOD:** Including the prices of different kinds of meat, vegetables, groceries; the use and particular nourishing qualities of each; also all that relates to the preparation of food for cooking, and its economical use.

II. **CLOTHES:** Including the use and value of the materials of which the various articles of clothing in common use are made; also what relates to the cutting-out and making of clothes, and to the best ways of mending and altering them, and keeping them in an orderly condition, so that they may always be found when wanted, and always be in a wholesome and comfortable state.

III. **HOUSEHOLD ARRANGEMENTS GENERALLY:** The best means of preserving health by purifying the air in close situations, especially in times of sickness or in case infectious disease; and the best means of keeping rooms at a proper temperature.

IV. **DUTIES OF SERVANTS:** Showing what the cook ought to know and do; what the laundrymaid; also what instructions should be given to servants in the country, especially in regard to their treatment of animals; how they can best manage and dispose of their wages; what moral qualities and personal habits are likely to render them most useful and happy.

V. **MANAGEMENT OF CHILDREN:** What instructions should be given to young persons going out as nurserymaids as to the responsibilities they incur when they take charge of a child; what advice should be given to girls likely to be employed in household matters at home, or in the management of the younger members of their family.

VI. **MANAGEMENT OF THE SICK:** Including the keeping a sick-room in a proper condition, the preparation of food for the sick, the management of sick children, use of simple medicines; also on the common remedies which may be applied in case of sudden accidents, especially where presence of mind may save life.

QUESTIONS answered by 14 school-mistresses, 45 pupils of the Whitelands Normal School for female teachers, and 24 pupil teachers—at Whitelands on the 7th of July, 1855.

1. Describe the school now under your charge, stating whether it is in the town or country. What is the general condition of the children and parents? Whether common things have been taught in your school, and how you think such subjects can best be taught?

2. What common things can most suitably be taught to children who get their living in a town, or to those who get their living in the country?

3. Why is economy in the use of all articles a duty in every condition of life? Do you remember any passage in Holy Scripture which bear upon this subject?

4. If at any time the supply of water should fall short, or if it could be obtained only with great difficulty, what could poor people do to promote cleanliness and health?

5. In the case of a family of an artisan or a laborer in your own neighborhood, consisting of a man and his wife, and six children between the ages of five and sixteen, state the probable amount of their weekly earnings; and say how it could be laid out to the most advantage, specifying the weekly expenditure, and the amount that should be laid by for rent, illness or any emergency. Would you advise the wife to do anything by way of adding to the weekly earnings? If so, what? Give your reason.

6. Give the notes of a lesson on any subject, historical or geographical, and show how you would introduce into such a lesson the mention of common things. Show also what moral and religious reflections may be made upon these subjects.

7. Quote some of the stories which you are in the habit of using, or which your teacher has used, by way of familiar illustration, when talking to children about common things.

8. Give an account of the different grains used for making bread; and give a good receipt for making a 4 lb. loaf, naming the weight of flour, &c.

9. State what you know as to the comparative waste of boiled, roast, fried, and baked meats; and the different advantages of each mode of cooking.

10. What opportunities are afforded you in the school-room of teaching children that tight clothes are neither economical or healthy, or of inculcating habits of cleanliness and order? and how would you improve these opportunities?

11. What are the various reasons for teaching children the duties of kindness and consideration towards animals?

12. In the case of young girls going into service, or about to be placed in charge of younger children, what should you have to say on the subject of presence of mind; or of the duty of never deceiving children, or pacifying them with false promises?

13. In the case of sudden emergencies—such as a child fainting, clothes catching fire, a severe scald or cut—what habits of mind would you cultivate? What measures should you take at the moment, and how would you turn such an event to good account?

14. What simple remedies would you use in the case of a cold, cough, or sore throat?

15. Suppose an infectious complaint were to break out in a school, and the school not to be broken up, what would be the best measures to adopt under the circumstances?

16. Give an account of what you consider the necessary qualifications of a cook, laundrymaid, housemaid, or nurse. State the usual wages of such a servant; what articles of dress would be most suitable for her particular occupation; and how much you think she ought to save. If you were required to select a nursery-maid for a lady's family, what questions would you put to the children whom you thought most likely to suit for the purpose? What moral qualities would you deem most essential?

17. What is the present price of tea, coffee and sugar? And state how much of each is sufficient allowance per week for one person.

18. Enumerate the different darning-stitches. For what articles should they severally be used? Give full directions for making a man's shirt, a housemaid's apron, and knitting a stocking.

19. If you were requested to provide a sufficient and suitable outfit for a schoolmistress, what materials would you recommend, and what would be the probable quantity required for each article, and the price per yard? What articles of clothing would you recommend for a housemaid in a gentleman's family? What are the objections to cheap and showy articles?

20. What are the advantages and disadvantages arising from the English and French methods of clear-starching and getting-up of linen? Give *Twelveteens'* receipt for washing; and state whether or not you think the clothes would be more injured by this process than by the old method of rubbing.

It should be mentioned that Miss Coutt's took a personal interest in selecting the subjects, witnessing the lessons, and examining the papers submitted—and

we should be glad to publish entire the letter in which she speaks of the results of her observations, because it shows an intelligent apprehension of the objects as well as the limits of industrial training in popular schools, and a kindly sympathy with the difficulties and trials of the poor. The following allusion to a friend, on whom she had relied for coöperation in carrying out her scheme, and whose sudden death suspended its execution for a time, bespeaks at once a grateful heart, and teaches a beautiful lesson—"the dear friend who has helped me throughout this plan, and to whom I am indebted, not only for what information I may possess, but for my first interest in these subjects, and for the first direction of my mind to the observation of the multitude of objects of usefulness and beauty with which a merciful Father has surrounded us. From her I first learnt that happiness and comfort are the exclusive possession of no condition in life, but are attainable by most people; proceeding out of common things and simple pleasures, and seldom indeed, if ever, to be wholly missed by those who walk carefully and reverently in the footsteps of our Great Example, and who cherish a humble sympathy with all the work He has intrusted to the hearts and hands of His children."

The "Summary account" presents a selection of the best specimens of essays and papers written by the candidates on the occasion, together with hints on the managements of wages, the best manner of buying and cooking food, the weekly expenses of a laborers family, the treatment of burns, scalds, cuts, fainting, colds, sore throat &c. The following plan for instruction in needlework is pursued in the school which received the prize of £4, for the best method of teaching this branch of industrial training.

PLAN OF NEEDLEWORK AT ST. STEPHEN'S SCHOOL, WESTMINSTER.

The school is divided into ten classes, each under the care of a separate teacher, either a pupil-teacher or monitor.

The children take their places in the classes entirely with reference to their ability as good and neat workers, their morning lesson-class having nothing to do with that in the afternoon, which is devoted solely to needlework.

In the case of two girls being deserving of promotion, a preference would be given to the one who was in the higher class of a morning; the object being to connect, rather than separate, the morning ability in study with the afternoon neatness and proficiency in the use of the needle.

The teachers also take their places in the classes which they superintend entirely by their ability and proficiency in needlework. It sometimes happens that a teacher high in the school for morning studies will have to be placed in a lower class for needlework; and another, whose morning abilities are but moderate, will be equal to the duties of an upper class in the afternoon's needlework; although, as a general rule, I have observed that a painstaking teacher in lessons, and especially in writing, is almost invariably a good needlewoman. We had some difficulty at first in carrying out the arrangements, as the school had proceeded for three years on a different system; but by perseverance the difficulties have disappeared.

One evening weekly is devoted to needlework by the mistresses, pupil-teachers, and monitors. The work of each class is inspected, difficult work fixed, and new work cut out by the teachers; the pupil-teachers who are nearest the end of their apprenticeship taking the most difficult work. Every teacher is expected to make a shirt during her apprenticeship, which has been cut out by herself.

The girls in the first class are taught to cut out and make various articles of clothing. The evening work-lesson often lasts three hours.

COMPETITIVE EXAMINATION. At a recent meeting of the Hants and Wilts Adult Education Society, addresses were made by Dr. Dawes, the Dean of Hereford, by the Bishop of Winchester, Mr. Cole, Inspector General of Provincial Schools of Art, Mr. E. Chadwick, and others. Prizes were given after a com-

petitive examination. The gainers are placed on a list of persons recommended by the Society of Arts, for promotion in the civil service of the government. On the subject of the system of open competitive examination, Mr. Chadwick made the following remarks:

Sir Charles Trevelyan, and Sir Stafford Northcote, Mr. John Wood, the Chairman of the Board of Inland Revenue; Mr. Bromley, of the Admiralty; Mr. John Mill, of the East India Company's service, who advocated open public and competitive examinations as a necessary test for admission into the public service, had solely in view what they were solely to consider—namely, the good of that service; but they might well have advocated the abolition of patronage on high and distinct grounds, as being necessary for the morality, for the repose, the continued respectability, and stability of families. They might have advocated the principle of open competition as a necessary aid to educational institutions of every class, and as a test and security to the public in the matter of private education. Among the other services rendered to education by the steps taken on the competitive examinations in progress, was the quantity of bad education which it had brought to light, and put in course of correction. Few people were aware of the differences in the effects of different courses of education, and how much mischievous misdirection of youth might go on for generations unnoticed and unchecked. In the years 1851 to 1854 inclusive, 437 gentlemen were examined for direct commissions in the Indian army; of this number 132 failed in English, and 234 in arithmetic. What did these figures denote socially but waste of vast sums of money spent in obtaining bad educations, waste of time, parents deceived, their hopes marred, and the fortunes of families jeopardized? And what did those figures not denote politically,—of the preparations for commands over the lives and well-being of others? He submitted that, as a means of testing good and bad education for persons of every class and degree, for the use of private persons and the general public, as well as for the purification of constituencies and the House of Commons, and for the efficiency of the public service, the full extension and development of the principle of open public competitive examinations was of great national importance. In his allusions to the official proceedings in relation to examinations for the public service, he would guard himself from implying that those proceedings had been satisfactory. On the contrary, what was satisfactory was to see the indications of the working of a good principle made manifest in despite of obstructions and latent and powerful hostilities. He would now warn them against the delusive character of the packed competitions of nominated candidates, and urge the necessity of increased exertions on the part of all who are concerned in education throughout the country to prevent the evasion of the principle of open competition, and to insure the great educational and social results already indicated.

IMPROVEMENT OF THE CONDITION OF THE AGRICULTURAL LABORER. THE LABORER'S FRIEND for July, 1856, contains an account of the ninth annual meeting of the Royal Association, established by Prince Albert, for raising the social condition of the laboring classes within the parish adjoining Windsor Castle, held on the 19th of June. There was an exhibition of flowers, vegetables, cottagers handicraft, specimens and models of tenements, barns, domestic and horticultural implements, home-made bread, &c., with an entertainment of good substantial joints of beef, mutton, hams, and plentiful supply of plum-pudding to over two hundred exhibitions. The following list of prizes were awarded by his royal highness.

Class 1. To the laborer, or artisan, or his wife, who has brought up a family in honest, sober, and industrious habits, and without parish relief, except in cases of sickness—two families received 3*l.* each; ten, 2*l.* each; one, 1*l.* 10*s.*; and one, 1*l.*

Class 2. To the widow of a laborer, or artisan, who has brought up her family in honest, sober, and industrious habits, whether with or without parochial relief—one person received 3*l.*; five, 2*l.* each; one, 1*l.* 10*s.*; and one, 1*l.*

Class 3. To families distinguished for cleanliness and tidiness in house and person—fifteen received 20s. each; and seven, 15s. each.

Class 3. (b.) To the best cultivators of gardens or allotments, being also persons of honest, sober, and good moral character—two received 20s. each; and three, 15s. each.

Class 4. To well-conducted servants, or laborers (male or female,) who have lived for the longest period of service in the same situation—three received 3l each; eighteen, 2l each; and nine, 1l. 10s. each.

Class 5. To young persons (male or female) who have kept their first place of service for the longest period, not less than three years—twelve received 1l each.

Vegetables, needlework, and handicraft—upwards of one hundred persons were awarded sums varying from 20s. to 10s. each.

The association arose from a desire expressed by His Royal Highness to bestow some mark of favor on cottagers in and around Windsor who were diligent in keeping their houses tidy. The design eventually embraced every kind of industrial occupation. Neat cottages, well cultivated gardens or allotments, the bringing up of families honestly, long service of laborers, artisans, and domestics, especially of young persons in their first situations, are the subjects sought out and rewarded. Special notice is taken whether children have been daily sent to school, sick clubs, savings' banks, or other provident institutions paid into, or assistance given to poorer relatives.

The association also extends its care, as occasion arises, to any question of a practical kind which may be brought before it. Thus it has taken an active part in the extension of the allotment system; from a conviction of its extreme importance to the health, comfort, and moral improvement of the laborer. There are now sixty-two allotment tenants in connexion with the association—the allotment grounds being self-supporting, though some expence was incurred in forming them. The committee has also taken up the question of model or improved dwelling-houses, and with signal success. The Royal Society also provides for better domestic accommodation for the industrial classes, and has succeeded in less than three years in erecting fifty houses, all occupied, and paying five per cent. interest to the share holders. No less a sum than 1,400l. has been administered during the first six years of the existence of the association, and out of this sum above 1000l. distributed in rewards and prizes to seven hundred persons.

Such an association as this ranks with the educational agencies of the country.

THE MANCHESTER MECHANIC'S INSTITUTION held a meeting in honor of Lord Palmerston's visit to that city—on which occasion his Lordship made an address of which we give a large portion.

The culture of intellect should be as universal as its endowment. The intellectual qualities as well as the moral feelings of our nature are scattered broadcast over the face of the earth. We find them everywhere, in the lowest classes as in the highest. Their development depends on the opportunities which are offered for their culture, and it is to these institutions that we are indebted for the faculties which are so advantageously presented. In this country, fortunately, the road to wealth and to honors is open to all. Some of those among us who have filled the most distinguished situations have sprung from the humblest position, and have raised themselves by their talent and good conduct. The great merit of these institutions is that, whereas the laboring classes are unable by their own unaided exertions to obtain access to those books and those means of instruction which are necessary for the development of their intellects, and whereas their hours of leisure are so few as to afford them but little opportunity for mental culture, you open to them the whole range of

the treasure of science, and, whatever line their genius may be best adapted to follow, you furnish them with the means of cultivating their faculties and thus increase their knowledge, and through their knowledge, their happiness. Man is endowed with a double nature—the moral and the intellectual. Both contribute to his pleasure and happiness; his moral enjoyments are independent of external support, they begin with his home, and constitute his domestic attachments; extending a little further they assume the character of friendship, in a wider range they become love of country and patriotism, and with a still further development they take the shape of benevolence and philanthropy. Those pleasures are within the reach of every man, and no man needs assistance to enable him to enjoy that happiness which consists in the exercise of his affections, but his intellectual qualities require assistance for their development. It is true that knowledge is power, but assuredly those who afford the laboring classes the means of acquiring knowledge, contribute not merely to their advancement in life, but also to their innocent and laudable enjoyments.

A little learning should not be despised. We have often heard quoted from the words of one of our great poets, that

“A little learning is a dangerous thing,
Drink deep or taste not the Pierian spring.”

I hold that that is a mistake and much error has it produced. A little knowledge is better than no knowledge at all. The more knowledge a man has the better, but if his time and the means at his disposal do not permit of his acquiring deep and accurate knowledge, let him have as much as he can, and, depend upon it, he will be all the better for it; and, although he may not be able to drink deeply of that spring, if his lips have once tasted of it he will go back to the same delicious waters whenever he has an opportunity, and his draughts, be they great or small, will refresh his fancy, invigorate his intellect, raise him in the scale of civilization, contribute to his individual happiness, and make him a more useful and honorable member of society. The first object of instruction ought to be that which we have been told is the meaning of education—to teach a man how to live, his attention ought first to be directed to that pursuit to which he means to devote himself through life; there, indeed, he should drink deeply, and there he should endeavor to perfect his knowledge, but should he on that account not endeavor to enlarge his mind, to extend his views, and obtain information on other matters not connected with the business of his profession? Then we may be told that we will make him a mere smatterer in knowledge, to which I reply that it is better for a man to be a smatterer than to be ignorant and uninstructed. There are many lines of information which it is most essential for a working man to pursue, but from which, were it not for the institutions such as this, he would be hopelessly excluded. In the first place there are certain laws of nature of which some regulate the trade in which he is employed, some govern and control his industry, and on others depend the well-being of his existence, and yet those laws are not to be known by the simple-minded man. They are the result of deep reflection and long experience, and can only be ascertained by consulting the works of those who have minutely investigated and carefully explained them. If a man were to enter a town of some foreign country, where there were laws the violation of which was attended with pain, imprisonment, or, it may be with death, would he not be deemed mad if he did not take the earliest opportunity to make himself acquainted with those enactments, so that he might avoid the penalties attached to their infringement? Yet there are laws of nature applicable to the daily pursuits of men which, if not attended to, inflict bodily pain in the form of disease, imprisonment in the shape of the loss of corporal powers, and even death, through the neglect of those sanitary conditions on which life depends. How important, then, it is that the working classes should be made aware of those natural laws and regulations which are indispensable to their own welfare and to that of their families. And why should not a life of labor be now and then cheered by the cultivation of the imaginative faculties? Why should not a day of fatigue be relieved in the evening by the occasional indulgence in the pleasure of poetry, and in that delightful enjoyment which the best works of fiction impart? Such occasional recreations, though they ought not to be the sole object of reading, are nevertheless useful, by giving buoyancy to the intellect and inspiring the mind with noble sentiments and

feelings which deserve to be cultivated. You cannot expect that a working man having but a small portion of time to devote to pursuits of this description should become an historian, but why should he not, by the aid of books well adapted for the purpose, gain a general knowledge of the history of this country, learn something of the rise, decay, and fall of empires, and judge of the causes which contribute to national prosperity and to national ruin? Your institution furnishes the means whereby the working man may inform himself on these great matters, and obtain clear ideas on many other subjects of importance; why should he not have some knowledge of the constitution of the universe? I may be asked whether I would make him an astronomer or expect him to calculate eclipses, describe the orbits of comets, or examine the course of the planets. By no means; but of all sciences the mechanism of the universe is that of which a man who has little leisure at his disposal may most easily obtain an insight by the knowledge of those facts which are the result of deep study and careful calculation. An ignorant man believes that his country is the only one in the world, that this planet is the only great portion of creation, that the sun is placed in the firmament merely to warm him, the moon to light him home, and the stars to amuse him on the journey, but when he is led into the secrets of the vast universe, that contemplation of which, fills the mind with awe, his views become liberal and enlightened, his mind is raised above the ordinary groveling ideas of life, and he finds himself a superior being to what he had been before. It is clear, therefore, that institutions which promote such desirable objects are eminently deserving of the support of the people; they are peculiarly congenial to the habits of the British nation, and they are singularly in accordance with the spirit of the British constitution.

Value of Mechanics and similar Institutions. They tend to bring together the different classes of society, combining them in the bonds of good fellowship allaying their jealousies, mitigating their asperities and causing them to work together in harmonious action for the general benefit of the commonwealth. I beg to congratulate the people of Manchester, therefore, on the noble institution of which this hall is the creation. I felicitate them on having led the way for other institutions of a similar nature, and I augur well of a system which is supported by so vast and influential an assemblage as I have now the honor to address. Rely upon it that, much as the fame and reputation of this great city may depend on its commercial prosperity, its accumulated wealth, and its vast mercantile intercourse with the remotest regions of the earth, there is nothing that will more conduce to your honor,—nothing on which you will reflect with greater satisfaction,—nothing by which you will be greater contributors to the happiness of your country, than the efforts you are now making to educate those who of themselves have not the means of acquiring that knowledge which it is fitting that they should possess. Be assured that as long as you go on in that course you will have no reason to regret any time or trouble it may entail on you. You will have the satisfaction of feeling that you are raising in the social scale those who are dependent upon you, and you will be rewarded not only by the grateful emotions which your benefits will evoke, but by the knowledge that you will see rising annually under your parental culture a race of men more and more intelligent, more and more deserving of the fostering care that you bestow upon them, and conducting more and more to the honor of their country, and to the power and prosperity of the land in which they live.

MINUTES OF THE COMMITTEE OF COUNCIL ON EDUCATION FOR 1856.—Since the action of Parliament at the last session, it is evident that the Education Department with its enlarged duties and means, is the nearest approach which will be made to a system of Public Instruction for several years to come. We shall therefore give in an early number a summary of the minutes of the Committee of Council on Education, under which the parliamentary grants are to be administered. These grants from 1839 to Dec. 1855 amount to £2,000,000 [or over \$10,000,000] and induced an expenditure of over \$25,000,000. Thus the grant of £580,381 in aid of building, &c., houses for elementary school led to the raising of £1,512,231; and of £147,426 for Normal schools, to the sum of £350,000.

DEPARTMENT OF SCIENCE AND ART.—The Report for 1856 of this new organization under the Board of Trade in Great Britain has recently appeared. Its divisions are as follows: I. Metropolitan Institutions in London, Dublin and Edinburgh. II. Aid to schools connected with the department having reference to secondary instruction. III. Aid to schools *not* connected with the department having reference to primary instruction. IV. Aid to schools by formation and distribution of examples and illustrations. V. Public services connected with the department.

I. The metropolitan institutions include A. the *Geological Surveys* (1700 sq. m. in Great Britain and 1000 sq. m. in Ireland surveyed during the year.) B. the *Mining Record Office* (219 plans and sections of mines added the past year.) C. the *Mining School*, (394 lectures, 70 students; 4 courses of lectures to working-men, 600 in attendance on each; chemical laboratory, 100 pupils, metallurgical laboratory, 27 pupils.) D. *The Museum of Practical Geology* (Visitors 2200 per month.) E. *The Training School of Art and the Metropolitan District Schools*, London, (central school 397 pupils, district schools, average attendance 466, 33 parochial schools 1730 pupils.) F. *Female Art School*, (144 scholars.) G. *Museum of Ornamental Art, London*, (Increased by purchases from the Bernal collection and the French exhibition; visitors 78,427.) circulating Museum (400 specimens of art sent already to 4 large towns, 55,701 visitors.) H. *Library of Art* (500 vols. added, daily visitors average 30.) I. *Museum of Irish Industry, Dublin*, (25,008 visitors, 4 full courses of lectures, 1064 in attendance.) K. *Royal Dublin Society*, (Museum, Zoological Gardens, Library &c.) L. *Lecture Committee at Dublin*, (4 courses, 827 in attendance on all.) M. *Normal Lace School Dublin* (17 scholars.) N. *Industrial and Nat. Hist. Museum, Edinburgh*, 100,947 visitors; increase from 833 of the year before.

II. *Secondary Schools of Art*. (No. of schools 55, exclusive of 9 in London, above mentioned, 108,60 pupils.) *Secondary Schools of Science*, (18 schools, 10,007 pupils,) including 6 Navigation Schools and 3 Trade Schools.

III. *Aid to Primary Schools*. 18,988 children have been taught drawing by masters sent out by the department, an increase of 80 per cent. over previous year.

IV. *Apparatus* and examples have been furnished to 192 schools at an expense of £1,007. (Additions—*Mechanics*, by Prof. Willis. *Botany*, Professor Henslow. *Astronomy*, Dr. Drew. *Working Models of Mechanism*, Mr. Riggs. *Geology*, Mr. Jukes, Mr. Hawkins, and Mr. Sopwith.)

V. Public services of the Department. *Registration of Designs*. (4,391 entries the past year.) *French International Exhibition* was visited by masters of all the provincial schools of Art, and by forty of the best students, at the expense of the department.

The total expenditure for 1855–6, in all these most important branches of the public service included under the department of Science and Art, has been £81,384, 17s. 8½d.

THE NIGHTINGALE FUND.—The total subscribed up to November, 1856, to constitute a fund intended as a record of national gratitude to Florence Nightingale for her valuable services rendered to the sick and wounded of the British forces during the Crimean war, and raised to enable her to establish an *Institution for the training, sustenance and protection of nurses and hospitable attendants* already exceeds £30,000. This includes a contribution of £1,872 from M. & Madame Goldschmidt Lind.

SCOTLAND.

During the last session of Parliament four bills were introduced contemplating a revision of the system of Parochial Schools of Scotland. Two were withdrawn by their authors, and the other two passed the House of Commons, but were thrown out by the Peers.

We have received from Mr. S. S. Laurie, Secretary of the Education Committee, of the Church of Scotland, the *Report of the General Assembly and Parochial schools in Scotland for 1856*, (8mo Edinb. 197 pp.) It gives full information in respect to the schools directed by the General Assembly of the Presbyterian Church and the statistics of the Parochial Schools as examined by the Presbyteries for 1855. The number of scholars attending all their schools, was upwards of 19,000. Nearly a thousand more were in attendance at their Sunday Schools. The number of schools on the first scheme (in the Highlands) is 120, on the second (Lowlands) 45, in addition to 13 female schools, in all 178 schools.

Average income of each of the 116 teachers on the first scheme was £50 14s 6d; of each of the 42 teachers on the second scheme was £56 16s 6d, and of each of 12 female teachers £31, 16s, 8d.

Two Normal Schools are under the direction of the Assembly's committee, at Edinburgh and Glasgow. 180 scholars are in attendance upon them. A third Normal school is proposed for females. The Normal Schools receive aid from the Committee of Council on Education.

Agricultural Instruction is given in seven schools "the crops being cultivated in such a way as to exemplify the book lessons and to afford to some extent, at least an example to the neighboring peasantry."

The whole income of the Assembly's Committee from various sources for the year is £8,549, 10s, 4d; the expenditure, £9,633, 13s, 1d.

Schools examined by the Presbyteries.—From tables appended to the Report, there were 949 Parochial Schools examined with 74,233 scholars; 51 Burgh Schools; 90 Sessional Schools; 126 Assembly Schools; 155 Society Schools; 465 Adventure Schools; and 586 other schools; with an aggregate of 107,276 scholars, or a total of 2,490 schools, and 181,509 scholars.

IRELAND.

THE TWENTY-FIRST REPORT of the Commissioners of National Education in Ireland for 1854, with appendixes, makes a document of over 800 pages and exhibits the successful working of a system of national education on a large scale in which combined literary and moral, and separate religious instruction is given to children of all persuasions without interfering with the peculiar religious tenets of any description of christian pupils. At the close of the year 1854, there were 5,178 schools with 556,551 scholars, under 5,128 teachers. The expenditures by the Commissioners for the year amounted to £221, 591, (over \$1,000,000,) in aid of local and parental payments.

The following items for 1854, exhibit the comprehensive and liberal plan on which the parliamentary grants are administered.

For the Central Normal School and Model Schools in Dublin, . . .	£11,579.
Ten District Model Schools, about	13,000
Albert National Agricultural School, Model Farm, Garden and Industrial School at Glasnevin (near Dublin.)	15,558
Twenty-five District Model Agricultural Schools, (about)	8,000
Salaries for teachers in ordinary National Schools,	87,119
“ to teachers of Plain Sewing &c.,	2,351
“ “ of Embroidery &c.,	67
“ “ of Evening Schools,	232
“ “ Work-house Schools (not agricultural,)	349
“ “ for Agricultural instruction in ordinary schools,	168
Premiums to teachers for maintaining habits of cleanliness,	933
Inspection—6 Head Inspectors, 20 District Inspectors, Sub Inspectors,	16,818
Book Department,	29,794
Official establishment at Dublin,	12,126

FRANCE.

The following summary of the Budget for 1856, will exhibit at a glance, the wide range of institutions and objects embraced in the French scheme of public instruction, as well as the liberality of the government to this department.

BUDGET OF PUBLIC INSTRUCTION FOR 1856.

I. EXPENSES CHARGEABLE TO THE GENERAL FUNDS OF THE STATE.

CENTRAL ADMINISTRATION.

Chap. 1. <i>Personnel</i> , (Minister, Employés, &c.).....	472,250 fr.
1. Indemnities to certain employés and assistants,.....	6,100 fr.
2. <i>Matériel</i> , (Expenses of offices, &c.)	100,000 fr.

PUBLIC INSTRUCTION.

3. General Inspectors of Public Instruction,.....	232,000
4. General services of Public Instruction,.....	184,000
5. Superior Normal School,.....	178,610
6. Administration of Academies,.....	817,600

SUPERIOR INSTRUCTION.

7. Subventions,	800,000
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SECONDARY INSTRUCTION.

8. General Expenses,.....	51,000
9. Lyceums and Colleges,.....	1,400,000
10. Scholarships, (<i>bourses</i>), and reduction of fees,.....	710,950

PRIMARY INSTRUCTION.

11. Inspection of primary schools,.....	723,000
12. Expenses of chargeable to the general fund of the State,.....	4,970,000

SCIENCES AND LETTERS.

13. Institute of France,.....	586,300
14. Imperial College of France,.....	180,000
15. Museum of Natural History, (Garden of Plants,).....	479,780
16. Astronomical establishments,.....	136,760
17. Imperial Library, (ordinary expenses, course in archæology,).....	304,800
18. do. (extra. exp. preparation of catalogue,).....	50,000
19. Public Libraries,.....	\$200,400
20. Imperial Academy of Medicine,.....	43,700
21. School of Records,.....	35,400
22. School of living oriental languages,.....	55,800
23. Subscriptions,.....	120,000
24. Relief and encouragement to savants and men of letters,.....	180,000
25. Learned Societies, subventions, &c.....	30,000
26. Scientific voyages and expeditions; French school at Athens,.....	65,000
27. Publication of the <i>Documents inédits de l'histoire de France</i> ,.....	120,000
28. Public instruction in Algiers.....	181,200
29. Subscription to the City of Rennes for the construction of an edifice for the service of public instruction,.....	33,750
30. <i>Dépenses des exercices clos</i> ,.....	<i>Memoire.</i>

13,451,400 fr.

II. EXPENSES CHARGED TO SPECIAL RESOURCES.

PRIMARY INSTRUCTION.

31. Expenses chargeable to funds of the departments,.....	5,325,000
" " the special proceeds of primary	
Normal schools,.....	400,000
	<hr/>
	5,725,000

SUMMARY.

I. Expenses chargeable to the general funds of the State,...	13,451,400
II. " " to special resources,.....	5,725,000
	<hr/>
TOTAL,	19,176,400 fr.

The above budget does not include the appropriations for the following departments in aid of public educational institutions which do not depend upon the Ministry of Public Instruction.

Ministry of Worship.—Diocesan Seminaries; Normal Ecclesiastical School (*des carmes*.) at Paris.

Ministry of the Interior.—Conservatoire of Arts and Trades; Conservatoire of Music and Declamation; Imperial School of the Fine Arts.

Ministry of Agriculture, Commerce and Public Works.—School of Roads and Bridges; School of Mines; School of Miners at St. Etienne; School of Master Miners at Alais; Schools of Agriculture; Farm Schools; Schools of Art and Trades at Châlons, Angers, and Aix; Central School of Arts and Manufactures, at Paris; Veterinary Schools at Alfort, Lyon, and Toulouse.

Ministry of War.—Polytechnic School; Military School at St. Cyr; Military School of Medicine and Pharmacy; School of Artillery and Engineering, at Metz; Military Prytaneum.

Ministry of the Marine.—Naval School at Brest; Marine Schools of Surgery at Rochefort and Toulon; Schools of Hydrographic; Lyceum of St. Denis; Primary Instruction in the colonies, except in Algiers.

Ministry of Finance.—School of Forestry at Nancy; Grand Chancellery of the Legion of Honor; Houses of Education at St. Denis, Ecouen and St. Germain.

SPECIAL REWARDS TO SCHOOL TEACHERS.—The *Moniteur* contains an Imperial Decree, by which 465 school teachers who distinguished themselves by their self-sacrifice and humanity, during the ravages of the cholera, receive testimonials of the governments approbation; six bear the title "Academy Officers;" 73 receive a silver medal; 82 a copper medal; and 294 honorary mention.

FRENCH ARABIC SCHOOLS IN AFRICA.

The *Moniteur* of March 26th, published a report upon the French Arabic schools, which the government have maintained in Algiers for some years past, in the hope of having in time, native officials. It is proposed to establish at an early day an Arabic French Lyceum, or College.

The following statistics are given in the report:

In 1848, there were 115 elementary schools for Europeans, attended by 3,858 boys, and 4,250 girls. This number has been greatly increased, so that there are now 178 boys schools; 119 girls schools; 67 primary schools, with 10,672 boys, and 9,896 girls in attendance upon them.

HOLLAND—DENMARK.

DETERIORATING INFLUENCE OF PRIVATE EDUCATION.

The Catholic Bishop of Orleans, Monseigneur Dupanloup, in a recent *on Private Education*, holds the following language in reference to the rich and noble families employing private tutors :—

"Perhaps one of the causes of the weakening of the great French and want of political influence, is the private education they have given their children. Private life is excellent for repose, but it does not form the management of business and of men. It is a refuge, and not a novum private education weakens children which it separates from society, and them incapable of having power over themselves, and of sustaining them. 'A government which wished to rid itself of the great families, them out of the country, need demand nothing more than that, through for themselves, they bring up their children at home, alone, far from the of their age, in the narrow horizon of private education and the private. The great European families have followed for too long a period this false. How much has not France suffered from it! How much does she not at this very hour! What shall I say about Italy and Spain? Well, recently, in the great Italian cities, the young Neapolitan, Tuscan, princes walking in the Corso or Toledo, under the charge of those li *abbés*, professional tutors, always before or behind the age, but never in with it, I said sadly to myself—Behold, indeed, the image of this false. Is it thus those great families, and those nations, so long holy and illustrious arise again?'"

HOLLAND

REVISION OF SYSTEM OF PUBLIC INSTRUCTION. The King of Holland Address on opening the annual session of the States General, at the Monday, Sept. 15th, 1856, then made the following reference to the system of Public Instruction.

Bills for regulating the three branches of public instruction, will come to you at one and the same time. In that way the necessary relations parts that should form one whole, will be better able to be preserved and serve inviolability to all that belongs to the domain of conscience is traditional cares of my ancestors. Moved by that feeling we have the means of meeting as far as possible the numerous scruples raised by the primary instruction. I desire to insure to the Netherlands, with your school institutions, in which the religious character of the nation, first developed by ages of Christianity, may be respected, and by which the of knowledge and the principal of national unity may both be sanctified.

DENMARK.

NEW SCHOOL LAW. We have received from Charles Füh, Esq., Copenhagen the regulations established by the king, in pursuance of an order of Diet, for the government of the Primary schools in cities and rural districts of that kingdom. With this law and material before furnished by the respondent, we shall hereafter give an outline of the system of public instruction in Denmark.

NORWAY.

We have received from Mr. Hartvig Nissen, Educational Councilor of Norway, an account of the system of public instruction in that country, which we shall soon place before our readers.

We hear from Mr. C. L. Bruce, who has recently been making a journey in Scandinavia most favorable accounts of the progress of educational improvement. The *Storting*, or Parliament, and Crown Prince who is Viceroy of Norway, exhibit deep interest in the popular schools. The itinerating or circulating schools are giving place to permanent schools in the rural districts, and technical schools, or schools for drawing, modeling and mechanical instruction are being established in all villages and towns for laboring people, who attend in the evening.

SWEDEN.

We have received from P. A. Siljeström, Ph. D., of Stockholm, a package of documents relating to the educational movements of Sweden, together with a volume on the "*Educational Institutions of the United States*," the results of a visit to this country in 1849-50 on a special mission from the Swedish Minister of Public Instruction to inquire into the actual working of our school system. Dr. Siljeström is one of the most enlightened educators of Europe, and his labors are already felt in the re-organization of the schools of Stockholm, and the movements of the Swedish Association of Teachers, which was formed through his influence. We shall review his volume on the Educational Institutions of this country in a subsequent number,—and notice briefly the documents on the schools of Sweden.

"The evidences of improvement in Sweden," writes Mr. Bruce, "are more apparent even than in Norway, under the indefatigable labors of Dr. Siljeström, who has done more for the schools, than all their Diets for a half century. The new school regulations for the grade of schools between the popular or common schools, and the universities, and the re-organization of the schools of Stockholm on the plan of the public schools of the cities of our country, are the fruits of his judicious agitation of the subject. He is introducing a reform in school houses and furniture by the publication of plans drawn principally from Barnard's School Architecture, and superintending the erection of model houses. He has established a Polytechnic school at Stockholm, and evening classes for technical instruction to workmen engaged in various mechanical pursuits. One of the most remarkable features in the education of Sweden, is the prominence given to physical training. There is a gymnastic apparatus connected with every important school. The Swedish Association of Teachers have the greatest confidence in Dr. Siljeström's judgment and second all of his movements with a hearty good will."

IMPROVEMENT IN LABORERS DWELLING HOUSES.—A citizen of Gottenberg, whose name is not published, has recently given £10,000 to one society, and £5,000 to a commune for the erection of dwellings for laborers, similar to those provided for in the will of Abbot Lawrence.

RUSSIA.

We have received from Daniel C. Gilman Esq., for a time connected with the American Legation at St. Petersburg, and now Librarian of Yale College, a manuscript document drawn up for him in the department of Public Instruction, setting forth the "system of Upper, Medium and Lower Educational Institutions, existing in the Empire of Russia in 1854," which we shall publish soon.

ITALY.

The following notices of Institutions for Public Education in Genoa, Turin, and Milan are taken from letters by Rev. Abate Pullicino, Chief Director of Primary Education in the Island of Malta and Gozo—addressed to Prof. J. Tilleard, and first published in the *Literarium* for August (13.) and September (10.) 1856.

FEMALE TRAINING SCHOOL OF GENOA.—This school contains at the present time about twenty young women, who, during four hours daily receive from different masters instruction in grammar, geography, natural history, Scripture history, arithmetic, penmanship, linear drawing, vocal music, and method. The scholastic exercises are conducted with much propriety and order. The method adopted in the teaching is the simultaneous. The school is superintended by a governess, who, in the intervals of repose from study, further exercises the young women in female occupations.

This training school is directed by Prof. Vicenzo Troya, a gentleman who has published some meritorious works on education. Conspicuous endowments, both intellectual and moral, render him highly qualified for the honorable office which he holds.

FEMALE TRAINING SCHOOL AT TURIN.—This school is divided into three large classes, each presided over by a mistress. This division corresponds to a three years' course of study, which the pupils have to go through in order to become qualified as mistresses. The three classes are attended by 150 young women, who daily receive instruction from different masters in a variety of subjects. Much care is taken to exercise them well in Italian grammar and composition. Nor is the care taken in vain. Many of the students of the upper class write with so much facility and grace that nothing further could be desired.

PEDAGOGY IN UNIVERSITY OF TURIN.—A chair for Pedagogy has been created in the university of Turin. Some young men, by following the lectures given there, learn the principles of method, of which they afterwards see the application in the boys' schools. The young men generally leave this university school qualified as masters of method. Distributing themselves over the different provinces of the kingdom, they communicate at certain periods of the year the same instruction to others who wish to qualify themselves as elementary school-masters. In this manner, the normal instruction is not only propagated through distant regions, but is elevated to the rank of other studies which have the university for their chief seat.

The lectures on method in the university of Turin are given by Prof. Rayneri a clergyman of great zeal for the progress of public education. Among some excellent works published by him, may be particularized one which contains the principles of the science which he professes, entitled *First Principles of Method*.

PUBLIC ELEMENTARY SCHOOLS AT TURIN AND GENOA.—The elementary school in the arrangement of the instruction, and in the methods adopted, they are modeled upon the best schools of Germany. They are each divided into four classes, corresponding to four successive courses of study to be completed in four years. At the close of each year, the scholars pass by examination from one class to another. The instruction embraces reading, writing, arithmetic, grammar, and the elements of geometry, geography, and history. Vocal music and linear drawing are not neglected. Great importance is attached to exercising the boys and girls in speaking and writing their native language correctly.

SCHOOLS OF THE CHRISTIAN BROTHERS AT TURIN.—These are particularly excellent, and in them the best arrangements of the others may be observed. Various books published for the use of the other schools are employed. The boys remain six hours a day, four in the morning, and two in the afternoon. The number of children who are at present being educated at Turin in the schools of this religious order amounts to about 2,000.

INFANT ASYLUM AT TURIN.—Some of these asylums are under the direction of the Sisters of Charity. They are maintained partly out of public funds, and partly by private beneficence.

ABATE FERRANTE APORTI, who introduced the Infant Asylums into Italy, is now living at Turin. He is advanced in age, venerable in aspect, and infinitely

amiable in manner. Some years ago he rendered valuable assistance in the re-organization of the elementary schools of Piedmont, by giving a powerful impetus to the study of method. He now occupies an eminent position in connection with Public Education, being Rector of the renowned university of Turin.

TECHNICAL SCHOOLS AT GENOA.—The principal schools are at present, one for navigation and naval architecture, a second for chemistry applied to the arts, a third for industrial mechanics, and a fourth for drawing applied to the arts. The schools are furnished with a good supply of instruments and means of study, which are provided by the liberality of the chamber of commerce. The object is to improve the condition of the artisans, who have so great an influence on the state of the commerce of the country. These schools are all commendable for the manner in which they are organized, and the propriety with which they are conducted.

TECHNICAL SCHOOL AT TURIN.—The technical schools of Turin occupy some buildings adjacent to the Carignano palace. Here lectures of various kinds are given by able professors, sometimes in the evening, sometimes early in the morning, particular in chemistry and in mechanics applied to the arts. These schools are provided with abundant means of instruction, including a large collection of objects of natural history, and an excellent museum of machines and mechanical models. These last are in great part the work of one of the professors, who is a truly great ornament of this institution.

I allude to Professor Gulio, a man of mature age, but youthful vigor. He is singularly remarkable, not only for his knowledge, but also for the admirable and easy manner in which he communicates his ideas. These endowments render him a true type of the perfect teacher of a school established for the benefit of artisans. He is very widely known in Italy for a valuable work on industrial mechanics which he published.

REAL SCHOOL OR COLLEGE AT TURIN.—At Turin, that of the Carmine is distinguished both for its instruction, and for its discipline. About 200 youths reside within the walls, other 800 live outside, and only attend the instruction; altogether the students number 1,000. Many of them belong to the four elementary classes, which serve as preparatory to more advanced courses of study. These are of two kinds: classical and special. In the special course, things applicable to the arts are studied, such as (*inter alia*) linear drawing. Various professors give instruction in literature and science in the higher classes.

REAL SCHOOL OF MARINES.—This school serves to educate boys for the naval service of the State. The boys are admitted by examination; and, after passing with approbation through a regular course of study, they go out to occupy posts in ships of war. The number of pupils amounts at present to 50. They receive from different professors instruction in Italian literature, French language, calculation, physics, and mechanics applied to the art of navigation. Further, they are practiced in naval and artillery manœuvres. In the summer of each year they make a voyage of instruction in ships belonging to the State. Admirable order is observed in the college. The institution is provided with a physical cabinet, a library, and an astronomical observatory. This observatory is very well directed, and, being situated on an eminent point, it affords not a little convenience to the vessels which lie in the harbor.

The instruction in mechanics applied to the art of navigation is given by Professor Ciocca, a clergyman worthy of great regard for the attainments which adorn him, and the manners which render him infinitely amiable. He considers the extensive application which mechanics may have in the naval art as a point of the highest importance. With this subject he seriously occupies himself, and from his labors not only science, but the establishment to which he belongs, may one day derive great benefit.

INFANT ASYLUMS AT MILAN.—The infant asylums of Milan are modeled on the general plan of the institutions of this kind in Italy. They provide largely for the physical and moral, rather than the intellectual education of the children. Accordingly the instruction more particularly consists in the teaching of sacred history: some exercises in mental arithmetic are accompanied by singing or by slight movements of the body. The children are educated promiscuously as regards sex. They are made to wear a uniform dress in school. In the asylums for the poor, a dress made in the form of a blouse is supplied by the institution itself. The children pass the whole day in the asylum, and thus

the parents are relieved of the charge of them. Towards noon they partake of some food which they bring with them, or which is provided for them by the charity of others. Those asylums which are appropriated to the infants of wealthy families are conducted with greater propriety than the others. They have governesses qualified to give a more refined education. The parents pay a corresponding contribution, namely six Austrian *lire* a month. The asylums for the poor are maintained by private contributions. There are in all six asylums at Milan, and 1,500 children are educated in them.

PUBLIC ELEMENTARY SCHOOLS IN MILAN.—The elementary schools are of two kinds, lower and upper. The lower are composed of two classes, the upper of four, the two first (lowest) classes of the upper schools are the same as constitute the lower schools. The addition of other two higher classes is what constitutes an upper school. Each class has its special course of studies, to be completed in a year. The courses of the four classes of an upper school may be completed in four years. The boys and girls who at the end of a year are not found qualified to pass into a higher class repeat the course of the class in which they are. According to the grade of each of these classes, the boys and girls are exercised in Italian reading, grammatical analysis, penmanship, writing from dictation, Italian composition, arithmetic, and religious catechism. The children are received into the first class at the age of seven, up to that age the infant asylum is the place proper to their education.

Almost all these schools are under the superintendence of some clergyman, who acts sometimes in the capacity of director, sometimes in that of simple inspector. Among these clergymen I met some who are worthy of the highest regard for the love and zeal which they show for the institutions entrusted to their care.

Among the schools which I visited, I was pleased to notice an upper school for boys, situated in the vicinity of the course of the Porta Nuova. This school is remarkable in many respects. The discipline is perfect, the instruction excellent. The school is frequented by about 400 boys. Although the highest class is too numerous containing about 120 scholars, nevertheless they receive great benefit owing to the great ability displayed by the master who conducts it, in his instruction.

Nor should I omit to mention an upper school for girls, situated in another quarter of the city, namely, in the vicinity of the Church of St. Alexander. In this school about 500 girls are educated. The order maintained is remarkable, as also the propriety in the demeanor of the girls, although they belong for the most part to families of the poorer class. The method of instruction, as in all other schools of Milan, is simultaneous. In the two highest classes, the instruction is sufficiently varied and extensive. The girls are excellently exercised in Italian composition, they were tested in my presence. To the girls in the highest class was given as a theme, the proverb, "Truth is a virtue," on which some of them wrote in a few minutes some excellent composition. Some of the children showed themselves very expert, the result no doubt of the good education which they receive. They are well exercised in penmanship. A remarkable degree of care is taken to make them speak in school deliberately, and with a sufficient and not scanty number of words; this is done in order to habituate them to good and elegant modes of expression. Further, the school is provided with a small library, the books are selected and adapted to the condition of the girls; they are circulated among the diligent children for their instruction.

The number of lower elementary schools in Lombardy is said to be 5,000; of the upper schools there are 20. In these schools about 225,000 boys and girls are educated. The foundation or rather reform of these schools dates from 1820; although the act under which they were established was published two years earlier. Towards that time the population of this country had shown a desire for civil reforms, and the government had thought it necessary to reform first the institutions devoted to the education of the people. A worthy clergyman now an Octogenarian, Monsignor Carpani, canon of the cathedral at Milan contributed much to the promotion of this undertaking, using all his influence and all his talents to facilitate it.

THE OLDEST SUNDAY SCHOOL IN THE WORLD.—The Sunday school of the cathedral of Milan, owes its origin to San Carlo Borromeo—the author of the

best institutions of Milan. This school is a peculiarity of the place; under the vast and magnificent dome of this cathedral from noon to three o'clock on every feast day a large number of boys and girls assemble; the former are ranged in one wing, the latter in the opposite wing; the two classes are separated by curtains made for the purpose, the number is generally very considerable. I observed about 400 boys, and there was about the same number of girls. The boys and girls are usually distributed in various divisions. Besides the religious teaching instruction is given in reading, writing, and arithmetic; here are all the conveniences necessary for that purpose. The classes are conducted by clergymen, but various laymen lend their assistance from charity and from a spirit of religion. Remarkable order is maintained during the entire time of the instruction; the mode of teaching adopted is simultaneous; great are the advantages which many derive from this school.

REAL SCHOOLS AT MILAN.—These Real Schools correspond to those elsewhere called Technical Schools. As the gymnasial schools serve to prepare youths for the faculties of theology, law, and medicine, so the Real Schools were established to prepare youths for the arts, commerce, and the profession of engineering, the students afterwards continuing to pursue analogous studies in the university. The studies in the Real Schools are distributed in two courses, a lower and an upper. Each of these courses is completed in three years; so that the complete course occupies six years; although the lower course serves as a basis for the other, nevertheless it is in itself complete. In the Real Schools the students are occupied seven hours daily. The instruction in the two courses comprises Italian language and literature, German language and literature, Geography, Natural History, Civil History, Physics, Geometry, and the infinitesimal calculus, Chemistry and Drawing applied to the arts are studied.

The Real School of Milan was established about the year 1850. It is now frequented by about 360 students. There is a similar school at Venice. In other provinces and cities of the kingdom there are also similar schools though of an inferior order: they contain only the two first (lowest) classes of the lower course. In the school of Milan the classes for chemistry, and for drawing applied to the arts merit particular attention. Both are provided with all the means necessary for the instruction. The chemistry class in particular possess a most excellent cabinet of manufactured chemical objects.

GREECE.

The London Times contains the following letter from William Smith O'Brien, to one of the Regents of the University of Athens.

"DEAR SIR.—Being desirous to present to the University of Athens a copy of a work in two volumes which I have recently published under the title of 'Principles of Government,' I shall feel much obliged if, as representative of the University, you will cause it to be deposited in the library.

"I avail myself of this opportunity of offering my thanks to the professors for having been permitted, in company with my son, to attend several lectures at the University. Although I am aware that your halls are thrown open gratuitously to all who desire to attend the different courses of instruction, I am not the less sensible of the polite cordiality with which the professors welcomed our presence.

"We have observed with the greatest pleasure that in this country a most eager desire for instruction exists among all classes, and that the Government has endeavored to encourage these tendencies by promoting the establishment of schools for primary and intermediate education, as also by aiding the resources of your University, an institution which, I believe, owes its foundation to the public spirit of enlightened and patriotic individuals. These efforts have not been unproductive of fruit, and I much doubt whether there is a town in Europe inhabited by a population commensurate with that of Athens, which has made a greater progress in intellectual development. This progress is the more remarkable when it is remembered that in other countries the resources accumulated during past ages are brought to assist the intellectual operations of the present generation, whereas the very existence of modern Greece as a member of the European family claims no longer space of time than about a quarter of a century.

"The same observation applies also to industrial development. When it is remembered that almost every town and every field in Greece was laid waste by the Turks during the war of independence, the traveler is disposed to wonder that so much has been effected in so short a time. Such at least have been my impressions, though I have perceived with regret that some things have been left undone which might have been accomplished without much trouble or expense.

"I feel it to be due to a people from whom we have experienced much kindness and hospitality to offer my testimony in refutation of some of the misrepresentations which have been circulated in Western Europe with respect to the social condition of Greece, and which describe its inhabitants as a semi-barbarous people.

"Having just returned from an excursion in the northern provinces, during which my son and I rode about 300 miles unaccompanied by guards, and during which we had opportunities of conversing familiarly with men of all classes, from the monarch to the humblest peasant, I have come to the conclusion that there is at least as much of genuine civilization, if that word be used in the proper meaning, among the simple mountaineers of Parnassus as is to be found in the clubs of London or in the cafés of Paris. Let me add that during our tour we did not see a single drunken man, and were solicited for alms by only one beggar, a cripple without hands. I know no part of the united kingdom, or of France, respecting which a stranger could make a similar observation.

"That brigandage exists in parts of Greece, and specially in that part of the country through which we have recently traveled, is a fact which cannot be denied. Causes which lie beyond the control of the wisest statesmen have at various times occasioned outbreaks of this social disease; but, in candor, it ought to be observed that the greater part of Greece is as free as other portions of Europe from this calamity, and that great energy is at present directed towards its total suppression in those sections of the country in which it still exists.

"The misrepresentations to which I allude have been occasioned, in great measure, by the proceedings which took place in connexion with the insurrectionary movements of Thessaly and Epirus in 1854. I am not prepared to contend that those proceedings were consistent with political wisdom. They placed the Greek nation in antagonism with the two most powerful States of Western Europe, at a moment when those States were closely allied with Turkey.

"But, whatever may have been the motives of individuals, there can be no doubt that a great majority of the Greeks who took part in that movement were animated solely by a passionate desire, highly honorable to those who entertained it, to rescue their fellow-countrymen now resident in the Turkish dominions from that cruel oppression of which their own fathers had so long been victims. Had this movement taken place at a more favorable moment, it would probably have been hailed with enthusiastic approbation by the public opinion of Europe.

"Believing that the Hellenic race still possesses those heroic and civil virtues for which their ancestors were distinguished; believing, also, that the various elements of which it consists are destined to form hereafter one great and combined nation, I should feel disposed, if I were a Greek, to make little account of undeserved reproaches. On the other hand, sound policy appears to suggest that Greek patriotism should abide the progress of events and avoid external collisions, while, in the meantime, it should cultivate to the utmost all the resources, material, moral and intellectual, with which your country has been so richly endowed by Providence. In the performance of these honorable duties, the University which you represent naturally bears an important part. With best wishes for the success of its noble functions,

"I have the honor to be faithfully yours,

"WILLIAM SMITH O'BRIEN.

TURKEY.

A special committee has been appointed at Constantinople to inquire into the best means to promote public instruction in general, and to devise a plan for the organization of the higher branches of instruction in the spirit of the Hatt-i-Humayoun. In order to accomplish this, the non-Mahomedan communities will each send a delegate to take part in the deliberations of the committee.

Formerly, in Turkey, as in all other Mahomedan countries, the principal of individual education was followed as in England, the expenses being defrayed by numerous foundations, and the State having only a right of general superintendence. Not a Sultan died, from the conquest of Constantinople till the end of the last century, without making one or more foundations out of his private income. The conqueror Mohammed alone established eight schools for higher instruction near the mosque which bears his name. This liberal example given by the Sultan, was largely followed by the wealthy all over the empire. The result of this is, that there is scarcely a village in the whole empire which does not possess a mekteb, or school for primary instruction, of ancient foundation, and where more than 95 per cent. of the whole Mahomedan youth partake of this primary education. Constantinople alone numbered in the last century 1500 of these mektebs, in which children were taught reading, arithmetic, and religion.

Besides these schools for primary instruction, all the larger towns of the empire were provided with medresses, or higher schools, in which grammar, syntax, logic, metaphysics, philology, rhetoric, geometry, and astronomy are taught. Stamboul alone has 300 of them at this present moment.

Above these medresses were the colleges of the Ulemas, in which jurisprudence and dogmatics were taught.

The chief shortcoming of this system was the want of an intermediate link between higher and lower schools, which would have afforded an occasion for acquiring useful knowledge beyond the elementary instruction of the mektebs, without forcing the youth to make a profession of learning. It was a shortcoming which was felt until lately in England also.

In 1845 a commission was formed to introduce reforms and the report of this commission is the basis of the present system of education. It changed the principle which left education to individual exertion, and substituted that of an education given by the state. In carrying out this principle of centralization the committee followed the educational system in vigor on the continent, especially that of France. It centralized the whole education into the Ottoman University, with a permanent Council of Public Instruction, and divided the schools in three classes—elementary, secondary and high schools.

For the elementary schools the mektebs were taken as the basis. According to the will of their founders these schools had been always attached to some mosque, which had the direction of them and administered their revenues. The State was now substituted for the mosques. As these mektebs had arisen according to the fancy of the individual founders, they were unequally divided, and some more favored mosques had quite a superfluity. They were now divided according to the quarters of the different towns, and those which were not thought necessary altogether suppressed. Thus Constantinople, which formerly had 1,500 of these mektebs, now possesses only about 400. The revenues of the foundations were put under the administration of the State, and the masters and other expenses paid out of them; formerly a nominal fee of two piasters a month was paid by those who could afford it; this was abolished, and instruction was declared gratuitous, nay, obligatory for every male or female child past six years of age, and in order to enforce this law no master or tradesman is allowed to accept an apprentice who has not a certificate from some mekteb.

The secondary schools were formed after the model of the French schools. The course of study lasts four years, in which the students are taught grammar, writing, history, geography, arithmetic, and the elements of geometry. With these secondary schools, which were never brought up to the number of 14, originally decreed, the reforms ceased. Of the University only the shell exists used now as a French hospital. The only thing done hitherto for higher instruction by the State is the foundation of some schools for special purposes—for instance, those founded by Sultan Mahmoud, and attached to the mosques of Sultan Ahmed and Sultan Suleiman. for the education of public functionaries; that of the Sultan Valide, for the same purpose; an école honnête, for the formation of teachers; the school of Medicine, and some military schools—all at Constantinople.

It is, with this higher education that the newly-named mixed committee will have to deal.—*London Times*.

PERSIA.

The *Moniteur de l'Armée* contains the following:

"The Schah of Persia has just founded a military college destined for the instruction of young officers. The Prince takes the most lively interest in this establishment, which is near his palace in the citadel of Teheran. The instruction consists of mathematics, drawing of plans, the principles of the military art, and the French language, the knowledge of which is indispensable, as, strange to say, all the words or commands are given in French. The college is placed under the orders of the First Minister, and under the particular superintendence of Aziz Khan, the Generalissimo of the Persian troops, and a brave and devoted officer. The director of the establishment is General Mehemit Khan, and the director of the studies is a captain in the French Engineers, an old pupil in the Polytechnic School; and he also gives the lessons in mathematics, drawing, and topography. The number of pupils is fixed at 200, and they are remarkable for their assiduity and thirst for instruction. The Schah is frequently present at the examinations, and his presence excites great emulation. As he understands French, he frequently interrogates the pupils in that language, and gives to the most deserving, prizes consisting of gold or silver medals. A polygon for artillery practice is established near the school, and the young Persians show great aptitude in that branch of the military art. The same establishment has also a school of medicine and one of pharmacy; in which botany and chemistry are taught. These schools are under the direction of Dr. Pollak, of Vienna, who succeeded to the post of physician to the Schah after the much lamented death of Dr. Cloquet."

BRITISH INDIA.

The Correspondent of the London *Times* in Bombay writes thus under date, May —, 1856.

"Matters connected with education have of late attracted considerable attention. You will remember that the Court of Directors recently issued a dispatch laying down wide and excellent principles of national education. A new department was consequently organized; a director-general was appointed, and large salaries were assigned to him and the inspectors. Committees were appointed to consider the plan of an Indian University, and a system of vernacular instruction was again commenced. Above all, the principle of grants in aid to schools, whatever their religious teaching, was established. The latter plan was, of course, the key of the whole, as the only one which could encourage private efforts and reconcile the prejudices of the three great creeds. The system has now been in operation for a year. It was lately announced that the sum allotted for grants in aid was exhausted. This sounded well, until it was suddenly discovered that this 'sum' amounted to just £3,360 a year. The salary of the director-general is £3,000. The amount will doubtless be increased, but the whole expenditure on education in Bengal turns out to be less than £80,000 a year. Our population may be roughly estimated at 40,000,000. That is, we have as yet allowed for the education of the people a little less than two farthings ahead a year. The average cost of vernacular education is about 10s. a head a year. It might be reduced, perhaps, to 6s., but certainly not lower. There are 3,000,000 boys—for as yet we cannot educate the other 6,000,000—to be taught, and the cost therefore must be at the lowest £1,000,000 sterling a year. That sum is perhaps impossible, but we do not yet spend—and, unless the home authorities again interfere in it, we are not going to spend—a tithe of that amount. In the midst of this the chief engineer of the Presidency, Colonel Goodwyn, who recently prepared an estimate for building a bridge over the Hooghly, but calculated only the expense above the water line, has submitted a plan for a University building which will cost £200,000. It will be rejected; but the fact, for which I can vouch, illustrates the present defect in all our schemes of education. The work is scarcely begun, and the Government is still unable to perceive that, if done at all, it must be on a scale commensurate with the necessities of the country."

LOWER CANADA.

EDUCATIONAL INSTITUTIONS.

From the voluminous and able Report (for 1855,) of Mr. Chauveau, the new Superintendent of Education for the lower province, we extract the following highly interesting particulars.

The educational institutions of Lower Canada are classified in three grand divisions, viz: of Superior, of Secondary, and of Primary Schools. The first class is subdivided into Universities and Special Schools; the second, 1st, into Colleges, or properly so called Secondary Schools; 2ndly, into Academies, or Secondary Preparatory Schools; 3rdly, into Convents, or Academies for girls; and 4thly, into Special Secondary Schools. The third division comprehends the Superior Primary or Model Schools, and lastly the Elementary Schools.

The data on which these divisions are based are still very imperfect; and we must not be surprised if there have crept in some errors and anomalies.

The recapitulation of the three divisions gives the following results:

Divisions.	Number of Schools.	Professors and Teachers.	Number of Pupils.
Superior Schools, . . .	12	54	331
Secondary, " . . .	140	767	20245
Primary, " . . .	2736	2850	112193
Grand total, . . .	2888	3671	132769*

We have two Universities with five Faculties organized, and seven special Superior Schools, making altogether twelve Superior Schools, namely: five Theological Schools, of which there are four Catholic and one Protestant; two Faculties and one School of Law, two Faculties and one School of Medicine, and one Faculty of Arts.

There are 13 professors and 143 students of Theology; 10 professors and 46 students in the Faculty of Law; 25 professors and 105 students of Medicine, and 6 professors and 37 students in the Faculty of Arts, of McGill College.

The Faculty of Arts of the University of Laval is not yet organized; but several students from the College of Quebec are now in the highest educational institutions of Europe, preparing themselves for professorships, and their return is awaited for the opening of that important department of the Institution.

The united libraries of the Superior Schools and Colleges, give a total of 78,300 volumes. The cost of the museums, and of the apparatus for the classes of natural philosophy comes up to £12,750.

The value of the buildings belonging to these institutions would appear to be £155,500, a figure which I am sure is much below the reality; and it will be seen that the greater part of these edifices has been erected within the last few years. I have been unable to obtain satisfactory information as to the value of the buildings for Academies and Convents. It is also to be regretted that the information furnished to the Government respecting Superior and Secondary Schools, does not enable me to state, with certainty, the whole amount paid every year by the inhabitants of Lower Canada, as well under the designation of board for their children, at Colleges, Academies, and Convents, as by voluntary contributions for the erection of the buildings occupied by such institutions. There are also voluntary contributions for the support of Common Schools, of which no

* This total of 132,769 pupils makes a proportion of 56 per cent. of the children from five to sixteen years old. The proportion for Upper Canada is 76, and for the United States 66.

Report has been made, and extra assessments for the construction of school houses, the amount of which is not known. From approximate calculations, I may say, without fear of error, that the people of Lower Canada have for the last five years contributed in this manner over one hundred thousand pounds currency per annum. This sum should be added to the £63,000 produced by the ordinary legal assessments; and this would in fact give an amount nearly as high as that raised in Upper Canada for purposes of education.

The first section of the second division shows 24 Colleges, with a total of 252 Professors and Directors, and 4,089 Students. In six of these institutions, the dead languages are not taught; but in consequence of the length of their course of study, and the number of their students, I have thought it right to continue to extend to them the title of College, which they had themselves assumed.

The Seminaries of Quebec and Montreal, the two most ancient of our establishments, receive no assistance from the State. Their property consists principally in donations and ancient endowments. Their libraries, their cabinets of natural philosophy, and their museums, do them the greatest honor. One of these institutions, the Seminary of Quebec alone, possesses in its three divisions, that is to say, in the University of Laval and the greater and lesser Seminaries, 22,700 volumes. Its museum and cabinet of natural philosophy have cost over £5,000. Not to speak of the value of the greater and lesser Seminaries, the country seats of Mézerets and St. Joachim, where professors and students may, during the holidays and vacations, rest from the fatigue of their classes, the University of Laval has already spent over £24,000 in the building of, the vast edifices now in process of erection, and the total cost of, which will amount to at least £50,000.

There are 12 professors of the University, 4 of the greater Seminary or School of Theology, 26 of the College,—making 42 altogether.

The two Faculties in actual operation, those of Medicine and of Law, have both together 36 students; the Theological School, has 42, and the College 400, making altogether 478.

The Seminary of St. Sulpice has several libraries, which, united, would amount to more than 12,000 volumes. One of its collections of minerals, consisting of more than a thousand specimens, is a present from the celebrated Haily, and was assorted and classified by himself. The Rev. Mr. Villeneuve has collected such a great number of geological and mineralogical specimens, that they have not yet been completely classified; these collections and the cabinet of natural philosophy have cost over £3,000.

The professors of the greater Seminary, or Theological School, are 5 in number, and 18 are attached to the College,—making 23 altogether; of pupils, 60 attend the Theological School, and 256 the College,—making altogether 316. Besides this, the Seminary maintains a great many schools, and defrays the expense of rearing 129 orphans under the care of the Sisters of Charity. This institution annually expends £7,500 in education, and through its means 5,000 children receive a christian education.

The revenue from the farms of the Island of Montreal, is specially destined to the establishment of a model farm, on which vast agricultural works, which will soon prove to our farmers what the earth can produce, when cultivated with energy and intelligence, are already commenced.

The University of McGill College, which has lately suffered, by fire, a loss that no friend of education will fail to regret, succeeded however in saving nearly

the whole of its library, comprising 3,700 volumes. The value of its buildings is about £17,000 currency. In the three Faculties there are 20 professors and 109 students, and 9 masters, and 213 pupils at the High School, or College, in connection with the establishment,—giving altogether 29 professors and 322 pupils. Besides its regular classes this institution has commenced a course of popular lectures, which are delivered in the evening, and promise to be very successful.

The Colleges of Nicolet, St. Hyacinthe, Ste. Thérèse de Blainville, of Ste. Anne de la Pocatière of L'Assomption and of St. Mary at Montreal, are rapidly following in the traces of the two institutions of Montreal and Quebec. With respect to the institutions of more recent foundation, it is astonishing, considering how numerous they are, that they manage to support themselves; and nevertheless it will be seen that they not only do so, but also make considerable progress. Two new Colleges not mentioned in the table, one at Côteau-du-lac and the other at Rimouski, are in process of construction, and will soon be opened.

In eight of these institutions, the mathematical course is as full as possible, and comprehends the study of differential and integral calculus. In eight others, it stops at conic sections, and in the remaining eight, goes no farther than algebra and elementary geometry.

In twenty-one colleges, mechanics and astronomy are taught; in fifteen, chemistry; and in seventeen, natural history. In some establishments meteorological observations are regularly made. It would be very desirable that they should be generally extended, according to some system similar to that already adopted in Upper Canada. Dr. Smallwood, who has for a long time successfully prosecuted these investigations, has favored me with suggestions of which I will not fail to avail myself, as soon as possible, more especially with respect to Academies and Model Schools under the direction of the department.

Hebrew is taught to a few students in three establishments; Greek forms part of the course of fifteen Colleges, and Latin of eighteen. The elements of these two languages are also taught in several Academies.

English and French are also taught everywhere. In Colleges where French is the language of the classes, two methods have, of late years, been adopted to insure the progress of the pupils in the acquirement of the English language. The first is to teach some particular branch in that language, the second to devote, every week, a certain number of the hours of recreation to English conversation. The two languages spoken in the country should not in fact be studied as dead languages, but ought on the contrary, to be classed amongst things indispensable; and it would be very important that the Lyceums or Academies, where English is the language of the school, should adopt, in the study of French, some such method as the one I have just mentioned. Italian and German are taught only in the High Schools of Quebec and Montreal.

Belles-Lettres are every where taught, as are also geography and history. The History of Canada and that of the United States have, for the last few years, received more attention than they used to.

In nineteen Colleges, rhetoric; in eighteen, metaphysics and moral philosophy form part of the course of study.

The fine arts, music, vocal and instrumental, drawing, and painting in water colors, appear in all the programmes: linear, drawing, and the art of making plans and surveying, figure also. It is to be regretted that none of them mention fencing, swimming, horsemanship, or gymnastic exercises.

Eight Colleges have a commercial course separate from the classical; in fifteen others, book-keeping is taught as an integral part of the ordinary course.

Thirteen of these institutions have commenced practical courses on agriculture and horticulture; and in ten are taught the elements of jurisprudence and constitutional law, which also form part of the programme of several Academies.

Religious instruction is given in all the Colleges. At the High School of the University of McGill College, and at the College of St. Francis at Richmond, that instruction appears to be what it has been agreed to call "of a non-sectarian nature."

The number of boys' or mixed Academies is 43, with a total of 150 teachers, male and female, and 4,472 pupils. It will be noticed that the institutions where boys and girls attend together are almost all in the Eastern Townships. The Convent Schools and girls' Academies, forming the third section of the division of Secondary Schools, are 71 in number, and are attended by 11,639 pupils.

In most of the Convents and young ladies' Boarding Schools, the boarders and day boarders are taught history, geography, parsing, compound arithmetic, *Belles-Lettres*, the elements of astronomy, of mechanics; of chemistry, and of natural history, drawing, painting, music, vocal and instrumental, and all those sorts of needle work which form part of a complete feminine education of the highest order. The number of pupils, boarders and day boarders, who study all these branches, amounts to 4,139.

A considerable number of Catholic and even of Protestant pupils at these Convents, as well as at our Colleges, come from Upper Canada, and from the neighboring Provinces and States.*

The establishments of the Canadian order of the Congregation of Notre Dame of Montreal, several of which are of ancient foundation, kept up through the country, even in our worst days, a certain amount of education amongst the women of Lower Canada. It is to this that the French Canadian owes in a great measure that excellent domestic education which makes him particularly distinguished for the mildness of his character and the urbanity of his manners, not the least important amongst the elements of true civilization.

In making a comparison between this and other countries, we should never lose sight of the long suppression of the Order of Jesuits, the principal and most numerous body of teachers in existence, at the time of the conquest, the re-union of their property to the domain of the Crown, the rejection by the Legislative Council, under the old constitution, of several bills on the subject of public instruction, which had passed the House of Assembly, and lastly the state of isolation in which the Colony remained for so long a time after its session by France. French books and French journals, the only ones that the people could read at a time when nobody knew English, were rare and high-priced. This circumstance must have considerably retarded the intellectual progress of the country. Books and journals are the complement of the school; and when those who have received some education, have very few opportunities of developing and improving their knowledge, it cannot reasonably be expected that they will make the exertions necessary to disseminate information, and accelerate the progress of public instruction.

Happily, the greater facility of intercourse with France, and the knowledge of the English language, becoming more and more general amongst us, have produced, and are, day by day, developing a very different state of things.

* It has been impossible for me to ascertain the number of volumes contained in the libraries of these establishments, but it must be considerable, if I may judge from the fact that the Convent of the Congregation of Notre Dame at Montreal, which is the parent institution of that order has for its own share more than 9,000.

UPPER CANADA.

UNIVERSITY AND COLLEGES.

From the official returns submitted to the Legislative Assembly of Canada, June 18th, of the present year, we are enabled to present the following information regarding the higher seminaries of learning under government patronage in the upper province. The returns contain tabular statements on the following topics: 1, Annual Expenditure; 2, Sources of income; 3, Number of Professors; 4, Course of Study; 5, Number of Graduates, matriculated, as well as other students, distinguishing day students, their residences, religion, and age, as also their standing in their respective colleges. The last mentioned particulars concerning day students, though an important subject of local interest, would of course possess no value to the readers of our journal; and we shall therefore omit the details connected with them.

1. The account rendered with reference to the first of the topics enumerated above, present the annual expenditure for the University of Toronto, as amounting to £11,543; for Upper Canada College, Toronto, £8,441: The amount of surplus of the University income fund remaining on hand, at the disposal of parliament for academical education in Upper Canada, £6,580.

2. The amount of University income for the year 1855, £13,869; of Upper Canada College, £6,394.

3. The number of Professors in University College, is ten; one of whom is also President. Besides these, there is one lecturer, and one classical tutor. In Upper Canada College, there is one principal, with eleven masters of different grades.

4. The University embraces, in its plan, the Faculties of Law, Medicine, and Arts, a department of Civil Engineering, and one of Agriculture. The professorships embrace the following subjects, as grouped in our enumeration of them: classical literature, (Greek and Latin,) logic, rhetoric, and belles-lettres,—metaphysics and ethics,—chemistry and experimental philosophy,—the theory and practice of agriculture,—natural philosophy,—history and English literature,—natural history,—mineralogy,—modern languages, (French, Italian, German, Spanish,) Meteorology,—Oriental Literature, (Hebrew, Chaldee, Syria.)

Upper Canada College, ("Academy,") embraces in its course of instruction, the following subjects,—Latin, Greek, Mathematics, French, English, Arithmetic, Geography, Book-keeping, Writing, History, Natural Philosophy, Ornamental drawing, instrumental music.

5. The Graduates of the University are enumerated as follows: D. C. L. 4; M. D., 18; M. A., 22; B. C. L., 4; C. M., 1; B. A., 61; Mus. Bac, 1. Total 111. Undergraduates, Faculty of Law, 30; Medicine, 7; Arts, 48. Additional Students recently matriculated, 26. Total number of students including those who do not rank as undergraduates, but attend a partial course of lectures, 151.

The pupils of Upper Canada College are classified on the English plan of "Forms" (virtually *classes*), enumerated from the "seventh" to the "first," together with a preparatory form; the whole number of pupils amounting to 225.

The detail of particulars regarding the examinations for matriculation, honours, and degrees, in the University, would occupy too much space for our

limits. We may say, however, in passing, that they indicate a sincere desire, on the part of the different Faculties, to render the examinations a series of genuine tests, in regard to attainments, and not a mere *pro forma* affair. We remark, with pleasure, the gratifying circumstance, that in a city so limited, as yet, in population, as Toronto, its college and preparatory schools provide a course of liberal education for so large a proportion of its inhabitants.

The returns from other colleges besides those which have been mentioned, are from various causes, less full in detail, than those of which we have given the preceding statements. In Victoria College, Cobourg, the number of Professors is 9; that of matriculated students in the four classes, freshmen, sophomores, juniors, and seniors, is, in all, 33. The studies of these classes are nearly like those in our own Colleges. In the preparatory course there are 196 pupils in the medical department, 70 students; total, 299.

Regiopolis College, Toronto, (Roman Catholic,) Professors, 6; Students, 70; besides a numerous Preparatory School. Course of study, partly similar to that of academies in the United States, and partly to that of our colleges.

Queen's College, Kingston, Professors, 10 in number with a Vice Principal; matriculated students, in the Faculty of Arts, 30; Theology, 10; Medicine, 47; Total 87. Graduates, B. A., 45; M. A. 12; M. D., 13.

One most encouraging feature of these various returns we have not room to present in detail; but it is one which augurs most favorably for the diffusion of intelligence and of sound learning among the professional and the wealthier classes generally in Canada:—we refer to the annually increasing numbers of all the classes, both in the colleges and the preparatory schools. The rapid advance of material prosperity in British America, seems happily to be attended by a constantly widening influence in favor of intellectual and moral culture, of a higher order and a more effective character, than formerly prevailed. The increasing interest taken by all classes of the people in general education, and the efficient measures, now in progress for the advancement of schools, give assurance that the onward course of the higher seminaries of learning, will be continual and steady.

NORMAL, MODEL, GRAMMAR AND COMMON SCHOOLS.

The annual report of Dr. Ryerson a Chief Superintendent of Education in Upper Canada, for 1855 is before us, in a document of 348 pages, royal octavo—full of interesting details respecting the Normal, Model, Grammar and Common Schools. We know not where to point to the evidence of more substantial improvement in the organization and administration of a system of Public Instruction during the last ten years, and to the assurance of still greater progress in education and knowledge during the next ten years—than to this document, for the province of Upper Canada. We shall give an abstract of this report in our next number.

SUMMARY OF STATISTICS. 3,325 Common Schools, with 222,864 pupils, at an expense of £224,818; 65 Grammar Schools with 3,726 pupils at an expense of £13,535; 1 Normal School with 124 pupils at an expense of £5,576; 179 Municipal Libraries with 116,762 vols., at an expense of £13,870; Apparatus, viz. 1,304; 48 globes &c., have been sent out to 159 schools at an expense of \$4,655; 85 worn out teachers of an average of sixty-five years have received a retiring pension from the Relief Fund; 5,000 copies of the Journal of Education are issued monthly and furnished gratuitously to School Officers; £288,998 or nearly \$1,156,000 were expended on 3,719 Educational Institutions in 1855.

UNITED STATES.

We intended under this head to have published a large mass of information respecting Educational Associations—State and National; Legacies and Donations to Schools and Colleges; Inauguration of new institutions, recent School Legislation, and Educational movements generally in each State. But we are limited to a few pages, and shall reserve our material for the next number.

A **TEACHERS' CONVENTION** was held at Selma, Ala., on the 24th and 25th of July, over which L. C. Garland, L.L.D., President of the State University, presided. The condition and improvement of the Primary Schools, of the State was presented by W. F. Perry, Superintendent of Common Schools, discussed by Dr. Garland, M. T. Walthall and D. F. Merrill of Mobile, L. J. McCormick of Russell, A. W. Richardson of Wilcox, and J. H. Cambell of Dallas. An address on "*Female Education, and as it should be*" was delivered by Prof. J. Darby, and another by President Garland on "*the Mission of Colleges.*" At an early stage of the proceedings a permanent organization was formed under the name of the **ALABAMA EDUCATIONAL ASSOCIATION.**

THE **ELEVENTH ANNUAL MEETING OF THE NEW YORK STATE TEACHERS' ASSOCIATION** convened at Troy on the 5th of August, and adjourned on the 7th. The President, L. Hazeltine, opened the meeting with an address on the history and policy of the association. An address on "*Music, its Extent and Influence,*" by Mr. Cavert of Amsterdam; by Mrs. Coleman of Rochester, on "*Corporal Punishment;*" by Prof. E. North of Hamilton College, on "*American Scholarship;*" by Miss Douglas of Newburgh, on "*Physical Education;*" by Dr. Lambert of Peekskill, on "*the Syntax of Science;*" by Miss Anthony of Rochester, on the "*Education of the sexes together;*" by S. S. Randall of New York, on the "*Responsibilities and Duties of Teachers;*" by S. B. Cole of Albany on "*Elevated Aims in Life.*"

THE **SEMI-ANNUAL SESSION FOR 1856 OF THE PENNSYLVANIA STATE TEACHERS' ASSOCIATION**, was held at Williamsport on the 12th, 13th and 14th of August. The President, I. P. Wickersham, Superintendent for Lancaster County, opened the meeting with an address, which was followed by remarks from Bishop Potter. An address was delivered by Prof. Davies, a delegate from the New York Teachers' Association. Reports were read by Mr. Plotts, on "*Mental Discipline;*" by Prof. Deans of Pittsburgh on "*High Schools;*" by Dr. Tyndale on a "*State Normal School;*" by A. M. Gow on "*Blackboards;*" by A. R. Browne on "*Graded Schools;*" by A. M. Gow on the "*Relation between Secular and Sunday Schools;*" by Miss M. Edgar on the "*Combination of Moral, Religious and Intellectual Instruction;*" by I. H. Orvis on the "*Number of hours of School per day;*" by C. U. Deans on "*Truancy.*" The reports were followed by animated and practical discussions. The reports and a sketch of the discussions are contained in the Pennsylvania School Journal for September. The next meeting will be held in Harrisburg, on the 20th of December 1856. About 200 members were present.

THE **FIRST SEMI-ANNUAL SESSION OF THE INDIANA STATE TEACHERS' ASSOCIATION** met at La Fayette on the 19th, 20th and 21st of August 1856. Addresses were made by the President, Charles Barnes, on "*Colleges and their relations to Public Schools;*" and by Dr. R. F. Brown, on "*Physical Education*"

or *Relations of the OUTER AND INNER MAN.*" Discussions were held upon the subject of the President's address; on "*Free Schools*," on "*Report on the duties of this Association in reference to Educational Progress*," on "*Increase of State tax for school purposes*," and on an Educational Journal supported by the Association.

THE ANNUAL MEETING OF THE WISCONSIN TEACHERS' ASSOCIATION was held at Beloit, on the 20th, 21st and 22d of August, 1856. Addresses were made by the President, J. L. Packard, on the "*Trials of Teaching*;" by Prof. J. Emerson of Beloit College, on "*History—its office in the work of Education*," and by W. Van Ness on the "*Disconnection of the State Superintendency with Politics*." Discussions were had upon the topics suggested by the lecturers, and on the Educational Journal supported by the Association; on school houses; on a State Normal School; on Teachers Institutes; on Union or Graded Schools; on the Education of the Sexes together; and on the condition of the schools and of education generally in Wisconsin.

EDUCATIONAL CONVENTION IN VIRGINIA.—Pursuant to a call through Governor Wise, a convention of delegates from the principal colleges and academical institutions of Virginia assembled at the Capitol, in Richmond, on the 23d and 24th of July, of which Rev. Dr. Smith of Randolph Macon College, was appointed President, and Rev. Dr. Regland of Richmond College, Vice President. The condition of the Literary Fund, and its application; the evils of premature admission of students to colleges and the remedies; the affiliation of the Academies, Colleges, and the University of the State; the qualification of students of professional schools of Law, Medicine and Theology; the education of girls; a system of Normal Schools and schools of applied science were discussed and referred to committees to report on, at a meeting to be held in the month of December, or at the call of an executive committee.

COLUMBIA (SOUTH CAROLINA,) ATHENÆUM.

An institution to embrace a Library, Reading Room, and Popular Lectures has been recently established in Columbia, South Carolina, and was inaugurated by an introductory lecture from Prof. Lieber, "*on the History and uses of Athenæums*." Prof. Lieber thus speaks of the history of the name.

The term Athenæum comes down to us from remote antiquity. Every place, town, temple or other fabric dedicated to Pallas Athene, the goddess of wisdom, was called in Greece, an Athenæon. There was a building in Athens called the Athenæon, where rhetoricians and authors read their productions, and youth received partial education, or at least instruction. The Athenæum, however, through which the name became most known in western Europe, was, probably, the institution which the emperor Adrian established on the Capitoline Hill after his return from his eastern tour, about one hundred and twenty years after Christ. This Roman Athenæum was a building where paid teachers or professors, as we would call them, taught rhetoric and philosophy; and where literary productions were publicly read. It was the highest educational establishment of the western portion of the empire—a sort of university; on a small scale indeed, compared with the magnificent institutions of this name in our times. When a youth had completed his provincial training, he would, if sufficiently wealthy, go to the Athenæum of Rome to finish his education. Other cities of the empire had their Athenæums. There was one at Lyons. The dark ages swept away these as nearly all other cultural establishments; but when the love of knowledge went forth again from the cloisters, we find an Athenæum at Maracilles—a sort of academy of belles-lettres. The name was occasionally given to similar societies in other places; but it was rarely used for the same purpose in Germany. There the word Athenæum has been chiefly employed, so far as I recol-

lect, for periodicals treating of topics connected with belles-lettres and taste.* The Athenæum long edited by Schlegel, known by most of you as the author of the History of Literature, has acquired great renown. There is a periodical of the same name in London, but in England the term Athenæum is chiefly used for institutions connected in some way with literature, or in general of a cultural character. The Athenæum club in London, was established by artists and literary men. The Athenæum in Liverpool, in the foundation of which the great banker-author, Roscoe, was especially instrumental, was probably the one that became the inciting cause of the establishment of the Boston Athenæum which was founded about the year 1807. Both the Liverpool and Boston Athenæums are establishments such as I have characterized, and as you are erecting here.

DO GOOD IN YOUR LIFE-TIME.

Some wealthy men are penurious in their charities during life, reserving their property for magnificent schemes of benevolence after death. The history of these posthumous legacies is not very encouraging, and Providence does not set the seal of approval on that covetousness which seeks to win the name and rewards of benevolence. The Baltimore *Sun* gives an instructive account of the McDonough estate :

"A number of papers, relative to the condition of the McDonough estate at New Orleans, have been forwarded to the Mayor and City Council of Baltimore, by Messrs. Emory and Peterkin, which embrace statements of considerable importance. It is stated by gentlemen of the New Orleans City Council that 'the income from the estate is about \$55,000 per annum, and the expense about \$27,000—leaving only \$28,000 of net revenue, which is \$1,000 less than the taxes on the property for the year 1856. So that the net income is insufficient to pay the taxes on it.'

Another member remarked, that the estate was worth now about one-half what it was when McDonough died—\$5,000,000 then, \$2,270,000 now. We have a bequest estimated, and fairly estimated, as worth \$2,271,000. We have it under the control of able and accomplished gentlemen, and what are the fruits of their labors? John McDonough has been gathered to his fathers five long years. In a vain attempt to leave a noble monument of charity, he made a will as wonderful and curious as it is hopelessly impracticable. Over \$250,000 have been spent in litigation; over \$100,000 have been spent in charges and commissions; over \$500,000 have been lost in interest and delays; over \$500,000 have been lost in decay and pillage, and depreciation of the princely domain. And, in short, these five years past have cost the estate one-half its original value. But notwithstanding all this, not one dollar of charity has ever yet been received by this estate, not one poor child has ever yet been educated; not one poor negro has ever been sent to Liberia; nor the tears and sorrows of one poor orphan boy ever yet been assuaged. At every point and in every way has the last will and testament of John McDonough been frustrated and thwarted. For the year 1855, the report of the agents and commissioners informs us that the revenues were \$49,000, whilst its expenses were \$29,000. The value of the real estate in the city of New Orleans is \$1,200,000. In the State of Louisiana \$2,270,000. The net revenues of \$19,805 have thus been for 1855 but $\frac{1}{2}$ per cent. of the city property, and but $\frac{1}{4}$ per cent. of the whole estate. The charges of commissions of agents, &c., for 1855, were near \$15,000, or one-third of the gross revenues and three-fourths of the net revenues. The estate paid no city tax for 1854, which would have been for Baltimore half over \$15,000, and for the whole \$30,000—or a sum greater than the whole net revenue. Such are the naked and startling facts displayed by the report. Nor is the end yet; three suits are now pending against the estate, each involving a large sum, and each carrying a new burden of expense."

* What we now call Athenæum is more frequently named in Germany a *Museum*. Our showmen have changed this, and the term, indicating a place sacred to the muses, is used for exhibition rooms sacred to bearded women, stiched mermaids and the like.

XIII. CONTRIBUTIONS TO THE LITERATURE OF EDUCATION.

We have on our table a number of reports, inaugural addresses, and treatises which are valuable contributions to the Literature of Education—which we propose to notice and from which we shall make extracts hereafter. We can now only find room for the titles.

LETTERS ON COLLEGE GOVERNMENT, and the evils inseparable from the American College system in its present form, originally addressed to Hon. A. B. Meek one of the editors of the *Mobile Register*, by Frederick A. P. Barnard, LL. D. New York: D. Van Nostrand. 1855. 104 pages.

REPORT ON THE PLAN OF INSTRUCTION in the University of Alabama, made to the Faculty of the University by F. A. P. Barnard, LL. D.; New York. 1855. 104 pages.

A COMPLETE SYSTEM OF EDUCATION. A lecture delivered before the American Academy of arts and sciences, January 19, 1853, by Samuel A. Eliot. Boston. 1853. 19 pages.

CAMBRIDGE ESSAYS, contributed by members of the UNIVERSITY, 1855. London: J. W. Parker & Sons, oct. 308 pages. The article on General Education and Classical Studies contains valuable suggestions which we shall transfer to our pages.

OXFORD ESSAYS. Contributed by members of the University, 1856. London: J. W. Parker & Son. 312 pages.

The article on NATIONAL EDUCATION by Rev. Frederick Temple, late Principal of Kneller Hall Training School is a masterly review of the state of educational parties on England at this time.

CONTRIBUTIONS TO THE CAUSE OF EDUCATION. By James Pillans, formerly Principal of the High School, and Professor of Humanity in the University of Edinburgh. 591 pages. London: Longman, 1856.

DISCIPLINA REDIVIVA: or Hints and Helps for Teachers leaving school. By Rev. J. S. Gilderdale. London: Bell & Dalby. 271 pages.

CLASSICAL SCHOLARSHIP AND CLASSICAL LEARNING; a practical Essay on Liberal Education. By J. W. Donaldson, D. D. London: Bell & Dalby, 1856. 259 pages.

THE EDUCATORS INSTRUMENTS. Hints on Method, School Government &c. By G. C. Drew. London: Judd & Glass. 1856.

LECTURES ON EDUCATION. Delivered at the Royal Institution of Great Britain. London: J. W. Parker & Sons. 1855. 315 pages.

THE BEDFORD SCHOOLS AND CHARITIES OF SIR WILLIAM HARPER. By James Wyatt. London: Longman. 1856.

A little piece of property in London, being a part of an estate left by Sir William Harper of Bedford, to endow a free school in that town, and originally leased for £12 per annum, has improved in value so as to produce in 1855 a rental of £13,000.

COLLEGIATE AND PROFESSORIAL TEACHING AND DISCIPLINE: By E. B. Pusey, D. D. London: J. H. Parker. 1854. 217 pages.

OXFORD REFORM AND OXFORD PROFESSORS. By Henry H. Vaughan. London: J. H. Parker. 1854. 120 pages.

THE END AND MEANS OF A LIBERAL EDUCATION. An Inaugural Address, delivered July 11, 1854. By M. B. Anderson, President of the University of Rochester: 1855. 95 pages.

THE RENSSELEAR POLYTECHNIC INSTITUTE. Its re-organization, its conditions, and plans for the future. By B. Franklin Greene, Director of the Institute. Troy, N. Y. 1853. 95 pages.

IDEA OF THE NEW ENGLAND COLLEGE AND ITS POWER OF CULTURE.—An address delivered on the occasion of his inauguration as President of the University of Vermont, August 5, 1856. By Rev. Calvin Pease, D. D. Burlington. 1856. 52 pages.

THE SCHOLAR OF THE PAST AND THE PRESENT. An Inaugural Address to the Students of Trinity College. By Samuel Eliot, Professor of History and Literature. Hartford. 1856. 30 pages.

HISTORY OF THE SCHOOL of the Reformed Protestant Dutch Church in the city of New York, from 1653 to the present time. By Henry Webb Dunshee, with an introduction by Rev. Thomas De Witt, D. D. New York. 1853. 120 pages.

THE EDUCATIONAL USES OF MUSEUMS OF NATURAL HISTORY. Being the introductory lecture of the session of 1853-4. By Edward Forbes F. R. S. London: Longman. 1853. 19 pages.

INDUSTRIAL INSTRUCTION ON THE CONTINENT. Being the introductory lecture of the session 1852-53. By Lyon Playfair, C. B. T. R. S. London: Longman. 1852. 54 pages.

THE LIFE AND SYSTEM OF PESTALOZZI. By Karl Von Raumer. Translated from the German by J. Tilleard. London: Longman. 1855. 80 pages.

THE SCHOOL IN ITS RELATIONS TO THE STATE, THE CHURCH AND THE CONGREGATION. By Sir James P. Kay Shuttleworth. London: John Murray. 132 pages.

THE EDUCATOR; or the Home, the School and the Teacher. 1856. London: Ward & Co.

THE NEW CRATYLUS; or Contributions towards a more accurate knowledge of the Greek Language. By John William Donaldson D. D. London: J. W. Parker. 1850. 750 pages.

HISTORY OF LEICESTER ACADEMY. By Emery Washburn. Boston: Phillips, Sampson & Co. 1855. 158 pages.

QUARTER CENTURY CELEBRATION OF ILLINOIS COLLEGE. Historical discourse. By J. M. Sturtevant, D. D. 52 pages.

CRETINS AND CRETINISM. Prize Essay of the University of Edinburgh. By George S. Blackie, M. D. Edinburgh: 1855. 70 pages.

THE PRESENT ASPECT OF THE SCOTTISH EDUCATION QUESTION. With a Historical Survey. By Layman. Edinburgh: 1856. 40 pages.

MONTICELLO FEMALE SEMINARY. Historical address delivered in Monticello, Ill., June 27, 1855, at the seventeenth Anniversary of Monticello Female Seminary. By Rev. Theron Baldwin, first Principal of the Institution. New York: J. F. Trow. 1856. 32 pages.

XIV. NOTICES OF BOOKS.

1.—*A Complete Pronouncing Gazetteer, or Geographical Dictionary of the World.* Edited by J. THOMAS, M. D., and T. BALDWIN, assisted by several other gentlemen; Philadelphia: J. B. Lippincott & Co., 1855. Large 8vo. pp. 2,182.

This extensive Gazetteer is based upon "Johnston's Geographical Dictionary," the English "Imperial Gazetteer," and for the United States, upon the "Gazetteer of the United States," by the editors of the present volume. It is the result of great labor, ability and discriminating judgment, and for fullness and accuracy, combined with compactness, surpasses any work of the kind from the American press. It has a merit of a high and peculiar character, in giving the pronunciation of geographical names on principles now generally received by the best authorities. We have consulted it often, with great satisfaction, and recommend its introduction into all libraries of reference.

2.—*Appleton's Cyclopædia of Biography.* American edition, edited by FRANCIS L. HAWKS, D. D., LL. D. New York: D. Appleton & Co., 1856. Large 8vo. pp. 1,058.

This work is a re-publication of the English Cyclopædia edited by Rich, with the addition of a large amount of matter pertaining to Americans by Dr. Hawks. We have had occasion to consult it, and with a good degree of satisfaction. It will prove a valuable acquisition to the Teachers' Books of Reference as well as to the library of its general reader.

3.—*English Grammar. The English Language in its elements and forms, with a History of its origin and development, designed for use in Colleges and Schools.* Revised and enlarged by WILLIAM C. FOWLER, New York; Harper & Brothers, 1855. 8vo. pp. 754.

Prof. Fowler has made a valuable contribution to the department of English Grammar in this philosophical treatise. We know of no better text-book for our Colleges and higher Seminaries of learning, or for the private student of the English language in its history and present development. It will be found a very interesting book even to the general reader.

4.—*The Microscope and its Revelations.* By WILLIAM B. CARPENTER, M. D., F. R. S., F. G. S., etc., etc., with an Appendix containing the applications of the Microscope to Clinical Medicine, etc. By FRANCIS GURNEY SMITH, M. D. Four hundred and thirty-four engravings on wood. Philadelphia: Blanchard & Lea, 1856. 8vo. pp. 724.

The author of this valuable treatise has achieved a high reputation as a Lecturer and Teacher in the London University, and as a philosophical and practical writer on subjects of physiology in all its departments. We have consulted no treatise on the revelations of the microscope with so much satisfaction, as this of Dr. Carpenter; and the American scholar is under great obligations to Blanchard & Lea, for bringing out an edition of the English work, with artistic illustrations in such fine style.

5.—*An Atlas of Classical Geography.* Constructed by WILLIAM HUGHES, and edited by GEORGE LONG, with a sketch of ancient geography, and other editions, by the American editor, containing fifty-two maps and plans on twenty-six plates, with an Index of places; Philadelphia: Blanchard and Lea, 1856. 8vo.

The title-page gives a good idea of the entire contents of the book. The maps are clearly drawn, and some of them have an interest quite new; e. g. that showing

the ideas which the ancients had of the world at various intervals, from Homer to Ptolemy. The topographical plans of ancient places, battles and marches, will also convey new information to many readers, and will form a very enlightening adjunct to classical reading and study. Prof. Long, was for a short period connected with the University of Virginia, having been invited to that post by Mr. Jefferson. The classical scholarship of this country sustained a great loss by his return to England. Mr. Hughes has a deservedly high reputation for the accuracy and beauty of his delineations of maps. This Atlas is a valuable contribution to our helps to classical scholarship, and to all libraries of reference.

6.—*The Physical Geography of the Sea.* By M. F. MAURY, LL. D., Lieut., U. S. N.; New York: Harper & Brothers, 1855. 8vo. pp. 274.

This volume by Lieut. Maury, contains the least technical and most widely interesting statements of discoveries and conclusions in the new science which the author has inaugurated, and already carried far towards substantial completeness. It is profoundly interesting, as a monument both of wise and persevering individual effort, and of the present condition of the grand and magnificently useful science of which it speaks.

7.—*Elements of Physical and Political Geography. Designed as a text-book for schools and academies.* By CORNELIUS S. CARTÉE, A. M.; Boston: Hickling, Swan & Brown, 1855. 12mo. pp. 342.

A School Atlas of Physical Geography, compiled from A. Keith Johnston, Milner & Petermann. Designed to Accompany Cartée's "Elements of Physical Geography." By C. S. CARTÉE, A. M.; Boston: Hickling, Swan & Brown, 1856. 8vo. thirteen maps.

This volume contains a compendium of much matter usually contained in school geographies, here named Political Geography; and as introductory to it, a system of Physical Geography, both as to the whole earth, and as to the special features of each of the "grand divisions." The Atlas, a separate work, consists of various maps mainly illustrative of the physical section of the book, prepared from the best sources; and very clearly and handsomely engraved.

8.—*Outlines of Physical Geography.* By GEORGE W. FITCH; New York: J. H. Colton & Co. 12mo. pp. 223.

Seasonable notice is taken, in the preface of this book, of the want of text-books and instruction in the peculiar classification and generalizations, which constitute Physical Geography. It is necessary, of course, to acquire the mass of detail which makes up the usual geography of schools; but it is no less necessary, at least for advanced classes, to acquire the notions respecting the distribution of land and water, the operations of water, wind and fire, the arrangements of Flora and Fauna, which in the hands of Humboldt and other physicists, have added so much of value, thoroughness and interest, to our knowledge of the earth and our power over its masses and forces.

The present volume contains a body of information, so digested and arranged as to render it available for the higher classes of schools and academies; who cannot fail, if the book is assisted by the collateral facts and comments which an intelligent teacher can supply, to find at once instruction, interest and amusement, in the study.

9.—*The Geography of Nature; or, The World as it is.* By M. VULLIET. Translated from the French, by a lady. Boston: Hickling, Swan & Brown, 1856. 12mo. pp. 611.

A compact and extensive mass of information as to nations, manners, the

animal and vegetable world, and the various facts and phenomena of in-organic nature, the mass of which is arranged under a compound classification partly by countries and partly by natural territorial divisions.

10.—*A System of Physical Geography. To which is added a Treatise on the Physical Geography of the United States.* By D. M. WARREN; Philadelphia: H. Cowperthwait & Co., 1856. 4to. pp. 92.

This work, in the common and convenient school atlas form, contains an outline of physical geography, compiled from the latest and highest European and American authorities, with many illustrations, and several valuable maps.

11.—*Physical Geography, for Families and Schools,* by R. M. TORNLIN. *Revised with additions,* by WILLIAM L. GAGE, Boston and Cambridge: JAMES MUNROE & Co. 1855. 12 mo. pp. 159.

This is a short compend of the chief facts in the various departments of Physical Geography, intended for beginners in the study.

12.—*The Recent Progress of Astronomy; especially in the United States.* By ELIAS LOOMIS, LL. D. Third edition, mostly re-written and enlarged; New York: Harper & Brothers, 1856. 12 mo. pp. 396.

A plain and succinct statement of recent astronomical discovery, together with short and cautious discussions of conclusions based upon them. The work contains also an account of astronomical observatories, and of gentlemen now engaged in making optical instruments—within the United States. It is an interesting and useful volume for the general reader and for school and village libraries.

13.—*Principles of Chemistry.* By JOHN A. PORTER, M. D. Professor in Yale College. 12 mo. N. Y. A. S. BARNES & Co. 1856.

The position held by the author of this elementary treatise as Professor of Agricultural and Organic Chemistry in Yale College, is a sufficient guaranty for the scientific character of his work. We have examined it with reference to its qualities as a school-book, its adaptation to the wants of beginners in the study of a science which to many even of college students is as obscure in nomenclature and symbols as it is brilliant in demonstrations. As a text-book for the higher classes in schools and academics we regard the work as deserving of high praise. The language is clear and concise, the illustrations are well chosen and the arrangement of topics is natural and methodic. While the technical terms of Chemistry are explained sufficiently to introduce the student to more extended treatises in the science, they are not employed so much as to impede his progress at the outset of his course. For example: sulphate of soda is called by this name in the body of the work and not by its symbol KO, SO, although in ten pages (129–139) the laws of combination, the symbols, and the doctrine of equivalents are clearly made known, and in an Appendix the chemical formulas are given for all substances before referred to. As an illustration of the authors style in presenting the more difficult parts of his subject, the first chapter of the Organic Chemistry may be cited in which the theory of substitutions is propounded. The more recent applications of Chemistry to Art in the Daguerreotype, the Telegraph, and the manufacture of Aluminium are well treated of, and in general the applications of Chemistry to Agriculture and other useful arts have been borne in mind throughout the entire work.

The volume is recommended to the examination of all who are teachers in this important branch of study.

14.—*A Treatise on English Punctuation; designed for letter-writers, authors,*

printers and correctors of the press; and for the use of schools and academies. By JOHN WILSON. Seventh edition, Boston; Crosby, Nichols & Co. 1856. 12 mo. pp. 334.

Mr. Wilson has, we believe, enjoyed a large experience in the actual practice of the rules which he has embodied in this clear and well arranged little treatise. He proceeds, correctly, upon the ground that punctuation is essentially grammatical and not rhetorical; addressed to the mind of the reader through his eye, not intended to instruct a speaker in his pauses.

There is an appendix, containing a variety of useful information upon capitalization, italics, and the nomenclature of printers; lists of abbreviations and of various signs and characters; and instructions, both interesting and valuable, upon the business which in these days of book-making is becoming so very general, of preparing "copy" for printing.

15.—*Exercises on Words. Designed as a course of practice on the rudiments of Grammar and Rhetoric.* By WILLIAM RUSSELL, Boston: Whitmore, Niles & Hall, 1856. 12 mo. pp. 225.

Mr. Russell, so well and widely known as a teacher of Elocution and Rhetoric, and as editor of the first series of the American Journal of Education, has given in this manual an outline of the methods pursued by him during thirty-six years of successful instruction in those studies. Mr. R. certainly cannot be accused of hastening into print. A book which is the result of a course of experiments so long and so well pursued by so capable an investigator, could scarcely fail to possess considerable value; and that this work has both value and vitality, is further indicated by the author's admonition that its usefulness requires active co-operation from teacher and student. This is the advice of a thinker and teacher; not of a book-maker.

16.—*Elementary Moral lessons for Schools and Families.* By M. F. COWDERY, Sandusky, Ohio; Bell, Cook & Co. 12 mo. pp. 224.

This little volume is one of a series, intended to meet the want of actual training in social and moral duties; and constructed upon the principle that there should be both precept and example, (i. e., statement of principles and exemplifying by illustrations) as much in morals as in mathematics.

It contains thirty-one chapters, each headed with the pithy maxim whose lesson is to be taught, and furnished with a narrative in point, and a number of questions for enforcement, and explanation and application to which the teacher is to add at his discretion. The anecdotes and other matter are mostly quite new and interesting, and the tone and spirit of the book unexceptionable. It is, indeed, an able and valuable essay in a department of training too much neglected, yet certainly not less important than any, and must prove a very efficient auxiliary and stimulus, not only to scholars, but to teachers also. The author has had a long and large experience in the instruction, administration, and improvement of public schools.

17.—*Elements of Moral Philosophy.* By HUBBARD WINSLOW, New York; D. Appleton & Co., 1856. 12 mo. pp. 480.

This class-book is arranged upon a somewhat new but distinct plan including, *First*, the analysis of the mental powers concerned in moral action; *Second*, the analysis of the methods and directions of that action; *Third*, a summary of the theory of right moral action; and *Fourth*, a code of the chief practical moral duties incumbent upon those in the various human relations. Its basis of procedure is chiefly the Scotch philosophy of Stewart, Brown & Reid, with some reference to Hamilton.

18.—*Outlines of Moral Science.* By ARCHIBALD ALEXANDER, D. D. New York; Charles Scribner, 1855. 12 mo. pp. 272.

Dr. Alexander's last illness prevented him from adding the final corrections to this manual. Yet, with no noticeable exceptions, it is entirely his composition; and presents in a compact elementary form the system of ethics, which was the result of his half century of study and teaching in that and its cognate fields of philosophical and religious knowledge.

19.—*The Principles of Metaphysics and Ethical Science applied to the Evidences of Religion.* By FRANCIS BOWEN, A. M., Boston; Hickling, Swan & Brown, 1855. 12 mo. pp. 487.

Prof. Bowen has prepared this volume, chiefly as a text-book for Colleges, from the substance of lectures delivered by him before the Lowell Association. It is an examination of the argument for Christianity from philosophical premises; commencing with the statement of the distinction between physical and metaphysical science, and concluding with the grouping together of the various evidences of a Revelation.

20.—*Seed-grain for thought and Discussion. A Compilation.* By MRS. ANNA C. LOWELL, Boston; Ticknor & Fields, 1856. 2 vol., 12 mo. pp. 360 each.

This is a systematized collection of maxims, and short statements of theory or belief, upon life and morals; sometimes from authors of strong practical character as Jeremy Taylor, oftener from the free nervous thinkers of the modern English school, as Kingsley, Ruskin, Helps, Martineau and Sterling; and oftener yet from somewhat transcendental, reflective, or affectional writers like DeSales, Fenelon, Madame Guyon, Upham, W. Von Humboldt, &c. As a repository of suggestions upon which to base conversational discussions for the higher classes especially of female schools, the work must possess considerable value in the hands of a teacher competent to the requisite oral explanation and comment.

21.—*A Collection of College words and Customs.* By B. H. HALL. Revised and enlarged edition, Cambridge; John Bartlett. 12 mo. pp. 508.

This is an entertaining and curious dictionary of the sometimes forcibly figurative slang, and fantastic customs, in which the exuberant spirits of undergraduates find a harmless and comical vent. It is surprisingly full; and must interest all whose college reminiscences are lively or pleasant, and is without worthy of notice as a contribution to the study of language and the nomenclature of education.

22.—*Elements of Agricultural Chemistry and Geology.* By JAMES F. W. JOHNSTON, M. A. &c. *With a complete index and American Preface.* By SIMON BROWN, New York; C. M. Saxton & Co. 1856. 12 mo. pp. 381.

A comprehensive explanation of the chemistry and geology of the various materials used in agriculture, with the addition of many facts and statistics interesting and valuable, to any farmer intelligent and pains-taking enough to understand and study them.

23.—*First lessons in Philosophy; or, the Science of familiar things.* By THOMAS TATE, F. R. S. A. *American edition revised and improved.* By C. S. CARTÉE, A. M. Boston; Hickling, Swan & Brown, 1856. 12 mo. pp. 252.

An Elementary course of natural and experimental philosophy, for the use of High Schools and Academies. By T. TATE, F. R. S. A. *American edition revised and improved.* By C. S. CARTÉE, A. M. Boston; Hickling, Swan & Brown, 1856. 12 mo. pp. 528.

Professor Tate has long been familiarly and favorably known as a practical

teacher in the Battersea Normal School and the Kneller Hall Training College, and as one of the editors of the Educational Expositor, now merged in the English Journal of Education. He has recently received a retiring pension from the English government.

The first of the treatises is a condensed explanation of the fundamental principles and truths of Chemistry, Mechanics and Natural Philosophy, illustrated with many examples and experiments, often chosen from amongst instances familiar to all.

The second treatise is intended to follow the above; being a fuller and more extended course of lessons, by the same author, of like character, and in the same departments of natural science.

24.—*Physiology and Calisthenics. For Schools and Families.* By CATHERINE E. BEECHER, New York; Harper & Brothers, 1856. 16 mo. pp. 250.

Containing a system of school physiology, prepared with a careful avoidance of unnecessary technics, and followed by the plates and directions for a course of calisthenics. There is also a variety of useful general information on the subject of preserving health.

25.—*Calisthenics; or the Elements of bodily culture on Pestalozzian principles; a contribution to practical education.* By HENRY DELASPÉE, London; Dalton & Co., 58 Holborn Hill. 170 pages of letter press, and 137 plates, with 2,000 drawings.

We procured a copy of this book from Appleton & Co., New York, because we saw at a glance through its numerous illustrations, that it was a systematic presentation of a system of in-door, and out-of-door exercises for children, as well as for youth and adults which we had tried with advantage under the instruction of Prof. E. Langdon—a teacher in this department whom we take this occasion to commend to individuals of sedentary habits, as well as to teachers of youth, and especially to students in college, and to the principals of schools for girls. The author, M. Laspee, claims that his book unfolds a system of bodily culture, analagous to that which Pestalozzi adopted for the development of the mental faculties; and without presenting his argument here, or his system in detail, we have no hesitation in saying, that the method prescribed and illustrated in this work by more than 2000 figures, are the best we have seen tried, or rather the best which we have tried, in our own person, and seen tried with young children, for the safe and varied exercise of muscles and joints which are too much out of use in men or children of sedentary habits. This book is altogether the best contribution we have seen made to bodily culture. We hope the author or publisher will bring out an edition in this country. The book is sold by Appleton & Co., for \$6.00.

26.—*The Teacher's Guide to Illustration; a manual to accompany Holbrook's School Apparatus.* By F. C. BROWNELL, Hartford; Holbrook School Apparatus Co., 1856. 12 mo. pp. 156.

A very clear and well arranged collection of directions and questions with answers, showing the methods of using Holbrook's School Apparatus for illustrating to the scholar's eye the principles of natural science and mathematics. The value of visible illustrations as a means of permanently fixing knowledge in children's minds can hardly be overrated; and we know of no auxiliary apparatus likely to be so cheaply and widely useful as Holbrook's. It is sold not only by the set, but by the less or greater number of pieces; and is really so inexpensive as to be within easy reach of every school.

27.—*First lessons in the History of the United States. Compiled for the use of Common Schools.* By a PRACTICAL TEACHER, Boston: Hickling, Swan & Brown, 1856. 12 mo. pp. 196.

A plainly stated summary of our national history, in the latter part of which the successive administrations are narrated in separate chapters; with a set of questions, and a chronological table.

28.—*First Lessons, in English Composition.* By MRS. SPENCER SMITH Boston: Hickling, Swan & Brown, 1856. 12 mo. pp. 131.

This is an elementary book, intended to habituate young scholars to correctness in the use of words and the preparation of manuscript. Short lists of words are given, to be written on the slate and afterwards to be inserted in their proper places in the blanks left in sentences immediately following, which are also to be written as filled, with due attention to capitals, paragraphing, &c.

29.—*A First Class Reader; consisting of extracts in prose and verse, with biographical and critical notices of the authors.* By G. S. HILLARD. Boston: Hickling, Swan & Brown, 1856. 12 mo. pp. 504.

This collection is made with the best taste, and judgment, from the best English and American authors, expressly for reading in the advanced classes of public and private schools. The notices of the various authors are carefully compiled, and contain much information.

30.—*The Constitutional Text-book: A practical and familiar exposition of the Constitution of the United States, for the use of Schools, Academies and Colleges.* By TRUMAN SHEPPARD. Philadelphia: Childs & Peterson, 1853. 12 mo. pp. 324.

Few understand the excessive ignorance as to the precise provisions of the Constitution, and also of the United States and State Statutes, which prevails amongst the very large majority of our people. The present volume is intended particularly to remedy this most unfreeman-like defect, by furnishing an explanation of the Constitution suitable for supplying the necessary knowledge to the higher schools and seminaries of learning.

31.—*Elements of Scientific Agriculture.* By J. P. NORTON, Professor of Scientific Agriculture in Yale College. C. M. Saxton & Co., N. Y., 1855. 208 pages, 12 mo.

The publishers have issued the 10th thousand of this admirable work, the production of a scholar of rare abilities, and still rarer powers of adapting his great acquisitions to the wants of practical men. His early death is still widely lamented, but this volume and the various essays which at different times appeared from his pen, will for many years to come, remain as standard guides to those who are engaged in the honorable pursuits of agriculture. No one will be prejudiced against "Book-Farming" who reads and practices the instructions of this volume.

32.—*An Historical Atlas.* By J. E. WORCESTER, Boston: Brown, Taggart & Chase, 1856.

We welcome a new issue of this admirable work, as a valuable help to the private student, to the editor, to the teacher, and the general reader. It embraces twelve charts, representing Universal History, Mythology, Sacred History, Ancient and Modern Chronology, the Sovereigns of all Nations, English, French, German and American History, and Biography. For exact information and ready reference, we know nothing of the kind, for the price, or within the same compass, half so valuable.

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33.—*The British Essayists: with Prefaces, Historical and Biographical.* By A. CHALMERS, F. S. A., Boston: Little, Brown & Co.

We have received from the publishers the TATLER, 4 Vols., and SPECTATOR 8 vols., of this beautiful library edition of the British Essayists and for paper, type, and accuracy, as well as cheapness, we can recommend the series for private and public libraries.

34.—*Rise of the Dutch Republic.* By JOHN LOTHROP MOTLEY, 3 Vols. 8 mo. N. Y.: Harper & Brothers. 1856.

Few periods in history are more interesting to republicans everywhere, than the time of "the great agony" through which the commonwealth of Holland was ushered into life. No scholar needs to be informed of the importance of Mr. Motley's undertaking. To depict in living colors the exciting events which occurred in the Netherlands during the 16th century, to analyze the characters which "sowed the wind" and "reaped the whirlwind," to philosophize upon the relations of those great commotions to the future and the past was a worthy theme. The execution of the work has been equal to the task. Graphic in its delineations, accurate in its judgments and profound in its reflections, this record of the republic of the Lowlands will hold the attention of every reader and reward the examination of every scholar.

Mr. Motley's account of the origin of the University of Leyden has already been alluded to in our pages. His account of the state of education at the beginning of the 16th century and particularly his description of those quaint Mechanics Institutes, the Guilds of Rhetoric, which were once so important establishments, we purpose hereafter to transcribe.

35.—*Cyclopedia of American Literature; embracing personal and critical notices of authors, and selections from their writings, from the earliest period to the present day; with portraits, autography, and other illustrations.* By EVERET A. DUYCKINCK and GEORGE L. DUYCKINCK. 2 vols. royal octavo; 676x 780 pages. New York: Charles Scribner. 1856.

This comprehensive survey of the whole field of American literature is a very valuable contribution to both public and private libraries; and is highly creditable to the research, accuracy and taste of the editors. It would be strange if there were not errors of omission and commission in the execution of such a work—names introduced of authors and works, which the world has willingly let die, and others omitted, which have contributed to the permanent civilization of the country and the race. But such errors may be corrected in subsequent editions, and whether corrected or not, the work has a permanent value, and will have a wide circulation.

36.—*English Traits.* By RALPH W. EMERSON, Boston: Phillips, Sampson & Co., 1856. 12 mo. 312 pages.

Mr. Emerson visited England first in 1833, and again by invitation of the Mechanics Institutes of Lancashire and Yorkshire in 1847. His observations and reflections at both these times are agreeably and pointedly stated in nineteen chapters, arrayed under such titles as Land, Race, Manners, Truth, Wealth, The Times, Aristocracy, &c. His chapter on universities, we shall copy in our next number.

37.—*Memorials of his Time.* By HENRY COCKBURN, New York: D. Appleton & Co., 1856. 12 mo. pp. 442.

This charming picture of men and manners in the capitol of Scotland in its brightest days, affords some extracts descriptive of the High School, the University, and the teachers and professors of that period, which we hope to transfer to our pages.

XV. QUESTIONS AND ANSWERS.

We are in the way of receiving frequent letters asking for information respecting educational matters, which we are ever ready to give as far as our knowledge, and engagements will enable us to do. As in some instances the information sought is of general interest, or at least may be of use to other inquirers, we have concluded to open a department for the publication of questions and answers on educational topics in this Journal—to which we invite contributions from all interested.

QUESTION 1. What are the best authorities for the History of the Universities of Europe, and especially of Academical Degrees?

ANSWER.—The best compendium on the subject which we own, is Prof. Malden's work, entitled "ON THE ORIGIN OF UNIVERSITIES AND ACADEMICAL DEGREES. London: John Taylor. 1835." Prof. Malden refers to the following authorities.

MEINER'S HISTORY OF THE UNIVERSITIES OF EUROPE. (Geschichte der Entstehung und Entwicklung der Hohen Schulen unsers Erdtheils; Göttingen. 1805.)

CONRINGII DE ANTIQVITATIBVS ACADEMICIS DISSERTATIONES SEPTEM CVM SUPPLEMENTIS. Conringius was a professor in the University of Helmstedt, founded by Julius Duke of Brunswick and Lunenburg in 1576. His dissertations were originally delivered in the form of orations, on occasions of academical solemnity. The second edition, which he published with the supplements, bears the date 1674.

IO. CHRIST. ITTERI MOENO-FRANCOFURTENSIS DE HONORIBVS SIVE GRADIBVS ACADEMICIS LIBER. The first edition of this work was a small duodecimo; the second a quarto. The latter bears the date 1698. In almost all matters of antiquity, Itter relies upon the authority of Conringius. In the Appendix to the second edition is Eriici Mauriti De Honorum Academicorum Origine Oratio, which contains a clear summary of the results of the investigations of Conringius.

HEUMANNI BIBLIOTHECA HISTORICA ACADEMICA, appended to the Göttingen edition of Conringius. In this work is a short summary of the contents of Du Boullay's History of the University of Paris.

GESCHICHTE DES RÖMISCHEN RECHTS IM MITTEL ALTER, ETC. History of the Roman Law in the Middle Ages, by Frederic Charles von Savigny. The third volume of this work contains an account of the Ancient Universities of Europe, especially of Bologna.

For the English Universities:

DISCUSSIONS ON PHILOSOPHY AND LITERATURE, EDUCATION AND UNIVERSITY REFORM. By Sir William Hamilton: Harper & Brothers. 1853.

NEWMAN'S TRANSLATION OF HUBER'S ENGLISH UNIVERSITIES, 3 vols. London: Pickering. 1843.

REPORT OF CAMBRIDGE UNIVERSITY COMMISSION. 1852.

REPORT OF OXFORD UNIVERSITY COMMISSION. 1852.

REPORT OF SCOTLAND UNIVERSITIES COMMISSION. 1831.

REPORT OF DUBLIN UNIVERSITY COMMISSION. 1853.

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HENRY BARNARD.

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